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ABSTRACT

This book contains 28 papers about the current status of occupational education in Finland, with special emphasis on context factors, structural and pedagogical reform, and quality management. The following papers are included: "Introduction of Educational Structure in Finland" (Johanna Lasonen, Marja-Leena Stenstrom); "Vocational Education and the Unstable Labour Market" (Reijo Vaarala); "Craft and Prevocational Education in Pre-Primary and Primary Education" (Juhani Peltonen); "Gender Stratification in Vocational Education and the Labour Force in Finland" (Stenstrom); "In Search of the Woman Manager" (Lemmikki Taalas, Maarit Virolainen); "Future Readiness in Vocational Adult Education and Curriculum Development" (Pirkko Remes); "On the Mission of Upper Secondary Education" (Matti Vesa Volanen); "Mutual Enrichment between General and Vocational Training in Youth Education" (Volanen); "The Finnish Polytechnic Model" (Osmo Lampinen); "Flexibility in Vocational Adult Education" (Matti Taalas); "Quality Creation through Apprenticeship Training" (Pentti Hakkarainen); "Self-Evaluation in Adult Education" (Matti Ropponen); "Foundations of Vocational Teacher Education Curriculum" (Seppo Helakorpi); "Pedagogical Approaches to Vocational Training" (Helena Leino-Kilpi, Anu Raisanen); "A Case Study of Student Self-Assessment in Upper Secondary Education" (Lasonen); "The Experimental Reform of Finnish Polytechnics: Structure, Curriculum, Study Programmes and Teaching Methods" (Annikki Mikkonen, Jukka Maatta); "The Transformative Paradigm of Teacher Education" (Jorma Ekola); "Static and Dynamic Dimensions of the Vocational Teacher Education Curriculum" (Ulla Mutka, Hannele Rousi); "Competency-Based Evaluation of the Vocational Teacher Qualifications" (Harri Keurulainen); "Educational Technology at Vocational Schools" (Peppi Taalas); "Education through Telecommunications" (Matti Suonpera); "Leadership in Vocational Education: Challenges and Opportunities" (Maija-Leena Clarkson, Leena Walls); "Quality Assurance in Vocational Education" (Clarkson); "Quality Development of Vocational Institutions" (Pentti Nikkanen); "Core Competencies of Learning Organizations" (Juha Maenpaa); "Change Management in Learning Organizations" (Heikki K. Lyytinen); "Professional Updating" (Pekka Ruohotie); and "Potential and Limits of Educational Reform" (Lasonen, Stenstrom). Many papers contain substantial bibliographies. (MN)

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CONTEMPORARY ISSUES OF OCCUPATIONAL EDUCATION IN FINLAND

Johanna Lasonen
and
Marja-Leena Stenström
(Eds.)

CE 069 473

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Institute for Educational Research
University of Jyväskylä

3

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PREFACE

As educational reforms have progressed in Finland throughout the 1970s and the 1990s, increasing attention has been paid to the changes taking place in activities at the level of organizations and curriculum implementation as well as to monitoring and evaluation. The Finnish occupational education comprises upper secondary-level vocational training and tertiary-level professional education aimed at young people and adults. In Finland, occupational education has been structurally integrated with the educational system as a whole.

An objective of the editors of this book was to provide an overview, based on the research and development work of the past two decades, of the current status of Finnish occupational education. Another objective was to suggest what directions the development of occupational education might take in the next decade. The volume is based on a selection of articles written by Finnish experts on educational administration, research, teacher education, and educational policy. The approaches and contents of the articles, which are the choice and responsibility of each author or team of authors, vary from analytic overviews to policy plans for educational reform, from reviews of existing research to descriptions of developmental projects concerned with particular issues of school restructuring. The authors discuss a variety of reform plans and educational policy strategies on the basis of theoretical and empirical analyses that bring together, across disciplinary boundaries, the views of educationists, sociologists, psychologists, administrators and business scholars on various aspects of vocational education reform.

The editors believe that vocational teachers, teacher educators, planners, administrators and researchers working in the area of occupational education and training will find the book a valuable case description of the Finnish experience. The book is the first publication of the Upsilon Chapter of the Omicron Tau Theta, the National Honourary Professional Graduate Society in Vocational Education. The Finnish name of the Upsilon Chapter is 'Ammattikoulutuksen tutkimusseura'.

The editors would like to acknowledge the contribution of the authors whose papers make up this book. Thanks are also due to the publication staff of the Institute for Educational Research, especially Kirsi Häkämies, Kaija Mannström and Jouni Sojakka. Particular thanks go to Liisa Havola, Hannu Hiilos and Sauli Takala for their vital contribution to proof-reading, and to Tuomo Suontausta for translating many of the articles from Finnish into English. Erkki Kangasniemi, Juhani Kirjonen and Raimo Mäkinen read the manuscript and offered valuable suggestions for improvement. Director Erkki Kangasniemi kindly accepted the book for publication under the auspices of the Institute for Educational Research. The editors are also grateful to the National Board of Education for financially contributing to the costs of proof-reading. Text, references, tables and figures were prepared, as far as applicable, according to the recommendations of the Publication Manual of the American Psychological Association.

Johanna Lasonen
Marja-Leena Stenström

Jyväskylä
June 1995

INTRODUCTION OF EDUCATIONAL STRUCTURE IN FINLAND

Johanna Lasonen - Marja-Leena Stenström

Finland has had an infrastructure of vocational training since the seventeenth century, starting with the organized guild system. The first vocational school, of spinning, was established in the 1750s. Heikkinen (1995, p. 447) characterized the following periods of the quantitative and qualitative changes in Finnish vocational education and training: vocationally oriented crafts-schools (1840-1880), full-time preparatory vocational schools (1880-1910), and schooling workforce for the national industry. Tertiary-level occupational training institutions date from the 1850s. Vocational and professional institutions became extensively available for the rural population in the 1940s, when central comprehensive vocational schools were established in all parts of Finland. In the 1940s and 1950s a great number of vocational education institutions were established to prepare qualified workforce as a part of a drive to restructure and improve the economy of Finland after the severe losses suffered during and after the Second World War. From 1950 to 1980, vocational and technical education mostly covered industrial fields. Since 1980, half or more than half of the vocational education openings have been directed to service areas. Vocational fields have varied and training has been reformed along with the changes of occupational structures and economic life. Consequently the recurring reforms of vocational education have resulted in the dynamic development of occupational education in Finland.

The Finnish occupational education has been reformed and restructured three times after the Second World War. The first wave of vocational education reform answered the needs of the agrarian and industrial society in the 1950s and in the 1960s. An efficient occupational education system was seen as a prerequisite for Finnish economic growth. The second wave of reform arose to meet the needs of the service and information age in the 1980s. A third wave of occupational education change addresses the requirements of an age of information technology and a knowledge-intensive economy in the 1990s.

Finland has made the national priority that the inhabitants of all areas of the country should be given equal educational opportunities. This goal is accomplished through the primary and lower secondary school which provides all children aged seven through sixteen with a compulsory education. All students take a national curriculum before continuing their education, after age sixteen, at the general or vocational secondary school (see Figure 1). In Finland, upper secondary education (youth education) comprises general and vocational education. In 1992, 87 percent of an age group received an upper secondary school diploma, 82 per cent for males and 93 per cent for females (Statistics Finland, 1994).

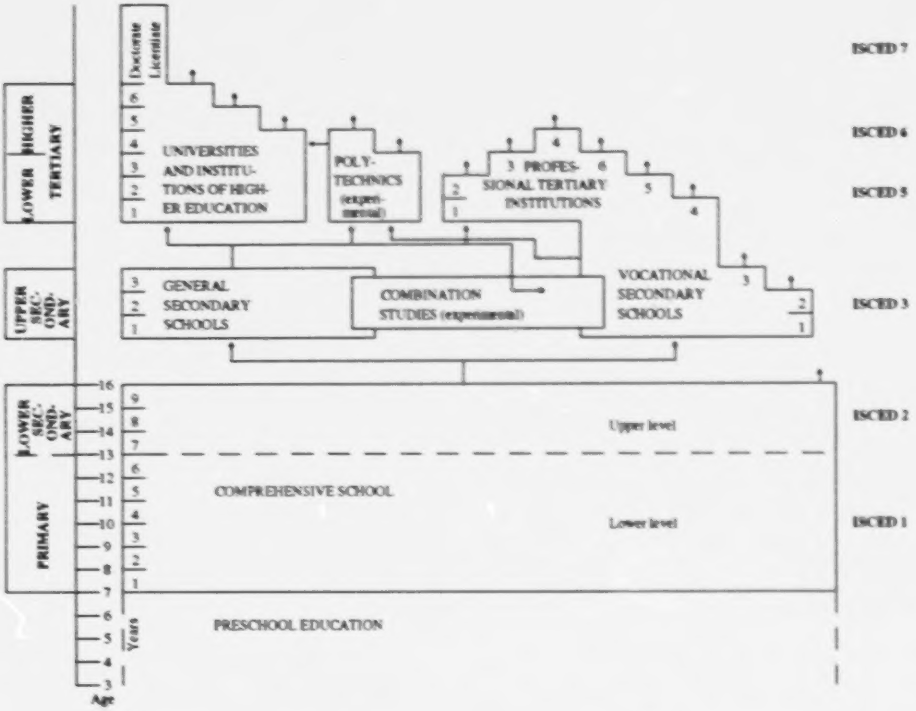
Doctorate
Licentiate
ISCED 7
ISCED 6
ISCED 5
ISCED 3
ISCED 2
ISCED 1
HIGHER
LOWER
TERTIARY
UNIVERSITIES AND INSTITUTIONS OF HIGHER EDUCATION
POLYTECHNICS (experimental)
PROFESSIONAL TERTIARY INSTITUTIONS
UPPER SECONDARY
GENERAL SECONDARY SCHOOLS
COMBINATION STUDIES (experimental)
VOCATIONAL SECONDARY SCHOOLS
LOWER SECONDARY
PRIMARY
Upper level
COMPREHENSIVE SCHOOL
Lower level
PRESCHOOL EDUCATION
Years
Age

Figure 1. General, Vocational, Professional and University Education in Finland.[1]

Note[1]: International Standard Classification of Education (=ISCED) by UNESCO
ISCED 1 = Primary
ISCED 2 = Lower secondary (second level)
ISCED 3 = Upper secondary (second level)
ISCED 5 = Lower tertiary (third level)
ISCED 6 = Higher tertiary (third level)
ISCED 7 = Doctorate (third level, postgraduate)

The Finnish educational system consists of primary, secondary and tertiary institutions. Comprehensive education, compulsory to all children between 7 and 16 years of age, lasts nine years and includes a six-year primary school and a three-year lower secondary school. Pre-primary education is delivered at day-care centres (kindergartens) and in collaboration with primary schools. About 60 per cent of six-year-olds are involved in pre-school programmes, but the participation will rise to 100 per cent at the end of the decade. Upper secondary education (16+) comprises general and vocational upper secondary schools. The main channel to the universities goes through the general upper secondary education, completed with the national matriculation examination. The university system consists of ten multi-faculty universities in all parts of Finland, seven specialised institutions in areas such as technology and business, and four art academies. There are more than 550 vocational, technical and professional education institutions in all parts of Finland, providing post-comprehensive education at three levels: studies of 2-3 years leading to an upper secondary certificate or diploma, studies of 4-5 years leading to a lower tertiary-level diploma, and studies of 6-7 years leading to the new occupational baccalaureate degree granted by the experimental and permanent polytechnics. There has been a 5 per cent intake quota for vocational students wishing to continue their studies at universities. The opportunity is hardly utilized by the students of the vocational and professional institutions. Formal education is also given in music schools and colleges, sport institutes, military academies and schools for seriously handicapped. In addition to the regular educational institutions, adult education is delivered in folk high schools, adult education centres and open universities. Finland has few private schools. In Figure 1, the regular educational system and the pilot projects of upper secondary school and polytechnic education reforms are presented together. The goals of the extensive pilot projects are to experimenting with educational solutions that would promote flexibility and articulation between the different forms and levels of educational institutions, compatibility with the educational structures of other European and industrial countries, raising the standards of qualifications, and the integration of general and vocational education.

The general upper secondary school offers a nationally uniform three-year programme of studies. It prepares students for the matriculation examination and school-leaving certificate that are the common criteria for admission to the university. The Finnish general upper secondary school is designed to provide a broad-based all-round education. All students take at least fourteen different subjects including, for example, a minimum of four languages. The students of the general upper secondary school further choose their major or advanced courses from languages, or mathematics and natural sciences, or social sciences and humanities. Some specializing national upper secondary schools offer advanced courses in sports and gymnastics, music, fine arts, or dance.

The emphasis of the vocational education reform in the 1980s brought more courses of all-round education to occupational study programmes. Every vocational student studies, for example, mathematics and sciences, and at least three languages. Up to August 1995, students enrolling at Finnish vocational secondary schools selected their study programmes from 26 basic lines within which there was a total of more than 200 specialized study lines. Depending upon their specialization, students entering the vocational upper secondary schools can obtain a certificate or a diploma after two or three years of studies. Upon graduation they may seek employment or continue toward a higher occupational diploma or degree, which provides additional preparation in a two to four year programme leading to supervisory and managerial roles in their areas of specialization. Students who complete the general upper secondary school and who are not admitted to or who have chosen not to continue their education at a university may, after their graduation, go on to enrol at a vocational upper secondary school for occupational preparation.

In 1992, 52 per cent of the students completing the comprehensive school immediately continued on to the general upper secondary school with 32 per cent enrolling at a vocational upper secondary school, 5 per cent continuing in the optional tenth form of the lower secondary school, and 10 per cent going to work and postponing their further studies (Statistics Finland, 1994). About 20 percent out of those 52 per cent of the general upper secondary school students will eventually enrol at vocational upper secondary institutions after finishing the general upper secondary school. About half of the students of the upper secondary schools are in general education and about half in vocational education. In 1992, the general upper secondary schools had about 115.000 students and the vocational upper secondary schools 140.000 students. About one fifth of the students of each age group is admitted to the universities. The majority of the workforce goes through the vocational upper secondary and occupational tertiary (lower tertiary) education. In 1992, the average drop-out rates per 100 students in Finland were 4.4 per cent in general upper secondary schools, 7.7 per cent in vocational and professional institutions, and 5.5 per cent in universities. The numbers of drop-outs also include the students who switch their field of studies.

All Finnish general and vocational secondary schools have physically separate facilities and operate under a mixture of national, local government, and private ownership. 92 per cent of the general secondary schools are funded by the local authority, 6 per cent by private agencies while 2 per cent get their resources from the state (Statistics Finland, 1994). Vocational secondary schools with a comprehensive coverage of occupational programmes offer courses in technical specializations. The comprehensive vocational schools are owned and operated by the state or the local authority or a federation of local authorities. Within a given municipality or rural district there will also be other types of vocational schools for commercial subjects, health, social services and design and handicraft that may be owned publicly or privately. In 1992, 55 per cent of vocational students attended vocational secondary schools owned by local authorities or federations of local authorities, while 35 per cent went to state-owned and 10 per cent to private vocational schools. By the end of the 1990s, all state-owned vocational schools will become locally owned.

The Finnish workforce comprises 2.5 millions persons of whom 53 per cent are men and 47 per cent women. In 1993, women comprised 59.3 per cent of all general upper secondary school students, 53.4 per cent of the students in vocational and professional education institutions, and 51.6 per cent of all university students (Statistics Finland, 1994). In addition to being concerned to ensure equal opportunities for Finnish citizens in all parts of the country, the makers of Finnish educational policy have, in the last decade, emphasized gender equality in curriculum implementation. Nevertheless, the segregated division of labour in education and the gender-biased fields of study are changing slowly if at all. In 1992, less than 5 per cent of all students enrolling at vocational and professional institutions were in the mixed fields where the proportions of men and women varies between 41 and 60 per cent. By contrast, almost 40 per cent of the year's new university students were in mixed fields.

Vocational secondary school students graduate with a thorough grasp of the knowledge and skills taught on a specialized occupational preparation programme. Their training equips them very well for a specific job but causes difficulties when economic conditions are poor or when changing workplaces no longer require their particular occupational skills (Lasonen & Frantz, 1995). Traditional vocational industrial training in Finland do not respond to the demands of the new postindustrial contexts and qualifications (Väärälä, 1995). The physically separate facilities of general and vocational upper secondary education programmes, with each type of school having a prescribed state-mandated curriculum, makes it difficult to respond to changing skill and knowledge requirements. In order to address such problems as well as the growing concern about the country's place in the global economy, particularly as regards future links with the European Community, national policymakers instituted a plan for developing the Finnish educational system towards greater coherence and a greater degree of international compatibility.

Experimental School Reforms

In Finland, there is a need for increasing the options of upper secondary education students in order to enable them to acquire a broader base of preparation. This would give them the option of gaining workplace competencies as well as of continuing their education at the newly formed polytechnics which provide a more practical tertiary education than the existing university route. The experimental polytechnic education is based on the existing tertiary-level occupational education provided by professional institutions.

The underlying rationale and reasons for undertaking the experimental reforms in upper secondary and tertiary education are the following: prolonged study times, increased dropout rate, overlapping education, a growing gap between general and vocational education, an excessive number of matriculated school leavers as compared with higher-level educational opportunities, the underrated status of occupational tertiary-level education in international comparisons, and the rigid structures of education which make it difficult to respond to changing skill and knowledge requirements (Kyrö, 1993). The purpose of the current experiments is to find out how inter-institutional cooperation can be used to raise the standard of upper secondary and lower tertiary education and to meet the changing demands for knowledge and qualifications. Another objective is to explore the possibilities of diversifying education and of creating flexible and individualized programmes.

An experimental upper secondary education reform is underway which aims at extending the range of opportunities for completing a vocational diploma, the general upper secondary curriculum or a combination of the two through the collaboration of vocational and general upper secondary schools. General upper secondary school students can take courses at the vocational schools and vocational school students can take academically oriented courses.

Some students may also choose a combination of academic and vocational courses that will give them a vocational diploma as well as a certificate of matriculation. Sixteen localities are running pilot schemes.

Another way in which the concept of flexibility has been introduced into the vocational education system is the reduction of 250 vocational specialization to establishing seven occupational clusters consisting of about 130 certificate, diploma and degree programmes (Opetusministeriö, 1993, 1994). The 26 basic lines have been dissolved, and the students of vocational upper secondary schools and tertiary institutions have renewed study programmes in August 1995. Since 1992, students at the experimental upper secondary schools have been allowed to focus on a major area of specialization and to additionally obtain a secondary competence in another programme or cluster (Lasonen & Frantz, 1995). This approach enables students to qualify for a number of related occupational fields, making them better able to respond to the structural changes of the labour market.

A wide-ranging experiment in occupational higher education (lower tertiary level) is also in progress, with 22 temporary polytechnics participating. The experiments cover eighty-four per cent of all the study programmes taught in occupational higher education (Numminen & Piilonen, 1992). The purpose of this experiment is "to raise the standard of higher vocational studies and devise new programmes leading to higher vocational diplomas through collaboration between vocational institutions" (Ministry of Education 1994, p. 36). In June 1995, nine out of twenty-two experimental polytechnics received the permanent status in the process of ranking the applicants' educational and managerial quality. In the near future, sixty to sixty-five (60-65) per cent of the age group will have access to higher education, with one third of students enroling at the universities and two-thirds of them at the polytechnics, representing the non-university sector of higher education.

Finnish adult education can be divided into general, vocational initial, continuing vocational, and liberal education. Vocational education is provided for adults who have not been given vocational training in their youth or who for various reasons wish to retrain themselves or to upgrade their vocational qualifications. Multiform learning is promoted in adult education in order to facilitate adult participation in education. Multiform teaching includes the integration of contact and distance teaching, communication and computer technology. Adult students receive their vocational education and training mainly at the institutions which are also responsible for young people's training and at vocational adult centres (Ministry of Education, 1993).

Adults can also obtain a certificate of advanced or specialized vocational qualifications by demonstrating their vocational skills in a special open examination. The examination is divided into different sections according to the occupational tasks existing in working life. In this examination, adult people can demonstrate their occupational competence regardless of whether they have acquired their skills through formal education or training or through practical working experience.

Internationalization is one of the key goals of a successful Finnish educational policy. The aim is to provide students at all educational levels with skills needed in global environments. The internationalization of Finnish vocational education focuses on international collaboration and study projects, student and teacher exchange, practical training in another country as a part of study programmes, the high quality of language study programmes, bilateral collaboration with emergent countries, and using foreign languages in teaching across the curriculum (Numminen & Piilonen, 1994). The countries of the European Union are aiming to promote the free movement of workers across Europe.

In Finland, education for international understanding has been an important part of ethical education in the official curricula (Lasonen & Finch, 1995). Comprehensive educational aims have consisted of education for international understanding, respect for human rights, peace, acceptance of diversity, positive attitudes towards foreign languages and their speakers, appreciation of languages as mediators of cultures, and international collaboration. In a culturally homogenous country like Finland, such aims are a challenge to educators.

The Finnish vocational education has been school-based. However, public vocational education delivered in institutions has not been the only way of socializing youngsters to working life. The Finnish workforce has also been trained by on-the-job training, learning by doing, apprenticeship and learning by oneself to some extent. About 3.5 per cent of the vocational upper secondary school students get their certificate or diploma through apprenticeship training, that is, though, an increasing form of training in the near future.

Vocational training and education have provided learning in occupations or clusters of occupations as a preparation for the workforce. Traditionally, vocational training has prepared students for crafts and skilled industrial work, commerce and public services. Conceptually vocational education differs from vocational training in including general education. Both concepts refer to mastery of vocational skills. In the pedagogical sense, training is associated with goals external to the learner. Laugo (1993, p.1) noted that training seems to aim at improving labour productivity while vocational education aims at a wider range of human development values.

Organization of the Book

The chapters in Part One, "Some Context Factors of Occupational Education in Finland", give an overview of the issues of transformations on the labour market, craft education, gender stratification and future readiness. Chapter One reviews a considerable portion of the literature on the changing structures of the Finnish society since the World War II and its impact on vocational education. Chapter Two links theory and practice to clarify the conceptual relationship between craft and prevocational education in pre-primary and primary education. Chapter Three explores the gendered enrolment patterns of Finnish vocational programmes. Chapter Four shows how symbolic and cultural meanings and expectations in management and leadership affect women. Chapter Five concludes the first part, presenting guidelines for the curriculum design of future readiness programmes in vocational adult education.

Part Two, "The Structural Reform of Occupational Education and Training", begins with Chapter Six, which discusses the basis for organizing daily work at schools, and reveals four main ideas of upper secondary education. Chapter Seven analyzes implications for reforming upper secondary education from an European perspective, modularizing curricula and integrating academic and vocational education. Chapter Eight introduces the experimental project of polytechnic education and a proposed dual structure of higher education in Finland. Chapter Nine discusses certification of occupational skills among adults based on prior learning. Chapter Ten explores the quality of training through cognitive apprenticeship, communities of practice, and the integrated work-based apprenticeship learning program in day-care work. Chapter Eleven describes a self-evaluation project of adult education organizations in Finland. Chapter Twelve shows how the vocational teacher training has changed in the last decade.

The chapters in Part Three, "The Pedagogical Reform of Occupational Education", supplement the picture of the structural reform of Finnish occupational training. Chapter Thirteen reviews modern pedagogical approaches to vocational training, concentrating on health care education. Chapter Fourteen links the theory and practice of fostering authenticity and self-directedness in student assessment among upper secondary school students. Chapter Fifteen presents empirical findings on how well the experimental Finnish polytechnic has succeeded in achieving the policy goals concerning the curricula implemented in the course of the project. Chapter Sixteen advocates a transformative paradigm of teacher education and presents strategies for the use of teacher educators implementing this paradigm. Chapters Seventeen and Eighteen conclude the changing approaches to the curriculum design and competency-based examinations of vocational teacher education that have emerged in the recent history of Finland with outrunning policies and strategies intended to restructure vocational education. Chapters Nineteen and Twenty suggest utilizing computers and telecommunication in multiform learning, describe methods for doing so, and present some topics for further investigation and development.

Part Four, "Quality Management in Occupational Institutions", presents guidelines for the design and facilitation of quality assurance activities. Chapters Twenty-One and Twenty-Two show how societal changes and school restructuring have challenged leadership renewal in vocational education, and presents a national strategy for quality improvement and assessment. Chapters Twenty-Three and Twenty-Four are devoted to the redesign and renewal of occupational institutions as learning organizations. The systematic internal development of vocational institutions is examined, and the concept of core competencies and the connections between individual and organizational learning is discussed. In Chapters Twenty-Five and Twenty-Six, change management and professional updating are described in the context of learning organizations.

The last section, "Potential and Limits of Educational Reform" draws on some critical principles that have featured in the international discussion on educational restructuring to reflect on the Finnish occupational reform movement. The final Chapter suggests new directions to analyze the potentials of vocational and professional education, and sums up the previous sections.

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Part One

SOME CONTEXT FACTORS OF OCCUPATIONAL EDUCATION IN FINLAND

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SOME CONTEXT FACTORS OF OCCUPATIONAL EDUCATION IN FINLAND

Part One describes the context and starting points of the Finnish reform of occupational education. The structures of Finnish society have been rapidly changing during the past decades. Such changes have been especially drastic on the labour market and in the occupations. As a result, vocational education and vocational teacher education are continually facing new challenges involving such issues as working life relationships, articulation and integration between educational levels and forms, gender stratification and future readiness.

The context and functions of vocational education have been transformed in recent years. The old system was build on a belief in full employment, a stable labour market and life career. The new situation demands different kinds of socio-cultural thinking and qualifications from its workers. Because of the transformations at the workplace and on the labour market, workers need to acquire new kinds of innovative qualifications. *Reijo Väärälä* describes in his article the threshold of a new situation in labour market. His perspective is the context of education, the role of education, its historical as well as its institutional transformations.

Craft education including textile and technical work pertains to each children's study programme in primary and lower secondary schools. At the pre-primary and pre-school level, craft education and modern craft are meant to integrate the cognitive, affective and psychomotor functions of children's minds. *Juhani Peltonen*'s intention is to clarify the conceptual relationship of craft and prevocational education and to consider the theoretical conditions for realizing craft and prevocational education.

One target of Finnish vocational education policy has been to rectify occupational gender bias. The aim has been that all occupational areas should have at least a 30 per cent representation of the minority gender. However, statistics and studies indicate that occupational education often follows the gender-segregated patterns of the labour market. Women and men make traditional choices both in education and as members of the labour force. *Marja-Leena Stenström* gives an overview of gender stratification in Finnish vocational education and labour force. The article highlights the enrolment patterns characteristic of the transition from school to work. The next article, written by *Lemmikki Taalas and Maarit Virolainen*, asks how symbolic and cultural meanings and expectations in the field of gender and in the field of leadership affect women. Leadership is a nontraditional choice for women in the labour force. Thus, they symbolize contradiction in the field of management and leadership because of their contradictory habitus.

As regards the division of labour and future readiness, people are able to influence and change the features of their environments and organizations. Future-oriented curriculum work provides many alternative modes of working with diverse groups and individuals. In her article, *Pirkko Remes* describes future readiness in vocational adult education.

VOCATIONAL EDUCATION AND THE UNSTABLE LABOUR MARKET

Reijo Väärälä

ABSTRACT

The structure of Finnish society has changed rapidly since World War II. This has increased mobility in the labour market. The structure of our production has had a very narrow base and for this reason depressions have had a very serious effect on the nation. Recently we have experienced a rapidly changing labour market and mass unemployment at the same time. These developments are destabilizing the labour market and people's career patterns. Vocational education is now in a new social context, compared with that existing ten years ago, which means that the educational system has to change its role and its functions.

Descriptors: *labour market, vocational education, unstable labour market, risk society, qualifications*

INTRODUCTION

Vocational education has been a central feature of industrial society. In Finland it has also been an important institution in socializing young people in a society in transition from an agrarian to an industrial one. However, public vocational education in special institutions has not been the only way of socializing youngsters to working life. Workplace training, learning by doing, apprenticeship and learning by oneself have also played a significant role in the Finnish labour market (Tuomisto, 1986). Now we are on the threshold of a new situation, a new era, and we have to analyze vocational education from this new perspective and in a new context.

Analyzing vocational education from the perspective of the social sciences means concentrating especially on the context of education, the role of education, its historical as well as its institutional transformations. I will concentrate mainly on the problems of transformation and continuity. This emphasis arose from questions of technological optimism, where we can often see plain over-optimism about the role of technological inventions and its effects on labour (Rose, 1975; Hirschorn, 1984; Kasvio, 1994, pp. 24-49). I will try to use constructive realism in analyzing the relationship between working life and vocational education.

LABOUR MARKET AND FINNISH DEVELOPMENT

Institutions of public education can be seen in a broader context than merely in that of teaching and learning. They are also socializing systems. Allardt, a Finnish sociologist (1989) wrote that general public education has been very important in teaching people industrial culture and teaching them the new industrial language. Zuboff (1988) illustrates (like Marx) the many difficulties which employers encountered when they tried to teach the new industrial order and culture to workers in the 18th and 19th century. Workers' life was shaped during the long history of agriculture, but the new industrial order insisted that they should break their bond with old customs, manners, beliefs and culture. They were forced to withdraw themselves from the cycle of nature, from the agrarian community and society. The questions I would like to ask now are: are we really on the threshold of a new era and a new culture with its new order? Is the new order so significant that it challenges us to achieve a new language, customs and culture? Are the discussions about flexibility the main pointers which show that something is changing now? Is it right to talk about a new postindustrial era and its consequences to vocational education? These questions are especially relevant when thinking about the transforming processes in labour markets and their consequences to educational processes.

During the last two decades sociologists have quite extensively discussed transformations in the labour market. (Littler, 1985; Kern & Schumann, 1984; Ashton, 1986; Piore & Sabel, 1984; Beck, 1992) Finnish theorizing in those discussions has been tied historically to two sources. The German tradition has had a strong impact in Finland, but during the last decades the Anglo-American tradition has grown in prominence. When we analyze labour markets from the point of view of vocational education, it is important to remember that our general educational tradition is bound to the German tradition.

Generally, the main themes in the debate on the labour market have been the problems of segmentation, divergence of markets, polarization and the problems of qualifications in transforming work. Gradually growing unemployment has become the focus of interest. In Finland many labour market developments came quite late compared with other European countries. Our industry has its roots in wood processing and heavy metal industry. But for a long time the sources of livelihood were based on agriculture and forestry. The powerful developments that changed the old structure and made an industrial nation did not start until the 1960s.

In vocational education it is possible to find three periods related to the developments in labour markets (Volanen, 1988, pp. 189-206). After the Second World War the main goal of all educational systems was to educate the young people of an agrarian society as proper citizens and to foster a belief in home, church and fatherland. Vocational education was quite inferior at that time (Tuomisto, 1986). Vocational skills were taught very practically at the elementary school. In the sixties Finland gradually developed into an industrial nation. The means of gaining a livelihood changed rapidly, people became part of a new structure, part of a new way of thinking and a new way of living, which brought them from the countryside to the towns.

Educational policy emphasized the school as a central part of the new society and the new industrialization. Education had to respond to the challenge of the new industrial society (Kuusi, 1968). Vocational education was planned so that it reflected the structure of working life (Volanen, 1988). The educational structure was virtually the same as the industrial structure of working life. The relationship between education and work was interpreted directly, and it was deterministic.

At the end of the seventies the strategy of national development and planning changed and its impact on educational policy was strong. The new policy was much more technology-centred than earlier. One reason for the new policy being shaped was that microelectronics and automation had gained a prominent role in Finnish industry and services. The energy crisis of the early seventies was a key factor which accelerated the discussions on a new national strategy. In vocational education the new strategy had little immediate impact.

Educational policy seems to be prisoner to the inner inertia of school systems (Coombs, 1985). The school has its inner conservatism which resists all reforms. Nevertheless vocational education has changed during the past years so that it is now mainly based on the structure of gaining a livelihood. Also, it has at least started a discussion about new technology (Ekola, 1991). Many educational areas have adopted the new technology and its thinking quite effectively. The important point, however, is that the educational structure and its correspondence with working life is still interpreted directly and deterministically.

THE CHARACTER OF THE FINNISH LABOUR MARKET

The general changes in labour markets are quite well known, but we still have many open and contradictory questions to clarify. One problem is that we have discussed general problems and analyzed them in the context of big countries. However, European countries have different historical backgrounds and circumstances. They also have different roles in international trade. The functions of the labour market also have different roots. (Lane, 1989; Lash & Urry, 1994, pp. 60-110; Julkunen & al., 1994) For these reasons I will analyze some special considerations relevant to the Finnish labour market.

First, a labour market connected to wage labour is a young phenomenon in Finland. Compared with Western Europe Finland was for a long time mainly an agrarian country. Not until the 1960s ans 1970s has it been possible to call Finland an industrial nation. The transformation was very violent. According to Alestalo (1985) and Alapuro (1985), Finland turned into an industrial nation in the 30 years following World War II. This is also significant when analyzing the history of Finnish vocational education. The expansion of our educational system started mainly in the seventies.

Second, when comparing Finland with other industrial countries we should keep in mind that the size of Finnish enterprises is quite small (Nätti, 1989). That is why many theorists are ready to claim that we have a smaller inner labour market than other countries. The existence of inner markets is often connected with the size of the enterprises. On the other hand, this means that we have a bigger external labour market. This means also that the educational system is a very important tool in manpower policy. During the last decade the structure of industry has changed enormously. The number of big enterprises has grown quickly and the significance of big enterprises has grown too. This is assumed to mean that inner labour markets are expanding.

Third, there is a large public sector in Finland. Labour market theories have emphasized that a large public sector is connected to a large inner market (Nätti, 1989). Employment in the public sector is often very long term and labour mobility thus is low. On the other hand the labour market has been very strictly regulated in Finland. This has meant regulations on notice, dismissal minimum wage, forms of employment, occupational safety and health. All these regulations have had impact on the functions of the labour market.

The fourth point I would like to emphasize is the significance of our level of education on manpower. Because of late industrialization our manpower has been uneducated for a long time. A growing industry recruited its labour mainly from the countryside. These people usually had no education other than the elementary school. For example, in 1942 only 5 % of the labour in industry had received some form of vocational education (Tuomisto, 1986, p. 180). In 1991 on the other hand, 51 % of Finns aged fifteen and over had educational qualification (Tilastokeskus, 1994). In 1991 Finland's level of education was in the middle range as compared with other OECD countries (OECD Employment Outlook, July 1993). The level of education has a strong impact on the functioning of the labour market.

A very significant factor is the role of women on the labour market. In Finland, especially after the sixties, women have been a very important labour market reserve. The proportion of women on the Finnish labour market has grown so that in 1989 73,3 % of women belonged to the workforce (OECD 1991; Julkunen, 1992).

THE CHARACTER OF LABOUR MARKETS IS CHANGING

In Western industrial countries the labour market has dramatically changed, especially after the mid-1970s. The most important developments were undoubtedly growing unemployment and growing instability. Statistics (Figure 1; Appendix 1) show that while labour markets were changing, unemployment rates were rising in the same proportion. The different functions of the American labour market have resulted in special features. If we look at the Finnish rates (Figure 2; Appendix 2) we note that they began to rise some years later than in other European countries. We can also see that in Finland the rates have escalated during the last three years. As Beck (1992) has suggested, the new situation in the labour market has enlarged the low-employment sector.

Traditionally the educational structure has been based on the idea of a stable labour market. It is also based on the premise that the transformations on the labour market can be predicted quite precisely. The planning system has developed the means of competent prediction and planning. In Finland especially during the last vocational education reforms, a system of tertiary education was developed which was intended to guarantee third level education for every young person. So we developed systems of planning and predicting developments on the labour market (Ekola, 1991). Today these ideas and structures are in crisis because of the rapid transformations. I would particularly like to highlight the question of instability in the labour market and the problems which are caused by it.

Ulrich Beck (1992) represents one of the most interesting standpoints in analyzing today's society from the viewpoint of the labour market. Beck could be included among the theorists who claim that the epoch is changing. Beck's critics have pointed out that his argument is too general and overpessimistic (Lash & Urry, 1994, pp. 31-59). However, it may be important to analyze recent trends in a general way. Beck speaks about risk society. Risk society comes after industrial society. A new society is in a process of forming and it includes the basic structure of the old industrial society but at the same time it is shaping new cells and ideas for a new kind of society. Beck calls this new concept the risk society. Beck does not argue that the new society is complete yet or that it can be described completely. According to Beck we cannot avoid the risks of modernization (Beck, pp. 19-50).

Beck gives a plausible description of the risk society and its labour markets. His analysis is based on theories concerning the changing strategies of companies, on the general process of individualization and on the belief that a society of unemployment is intolerable. His main points follow (Beck, 1992, pp. 139-150).

Traditional industrial society (modern society) is structured on standardized wage work and a standardized employment system. The function of almost all social institutions is based on this type of a work system. Educational institutions have assumed a standard employment system as a starting point for all educational planning and development. Social policy, housing policy and social security policy have assumed that citizens live the major part of their careers in a world of fullemployment. Fullemployment has been the general goal of society and at the same time it has become the norm and belief that regulates the functions of institutions and the actions of individuals.

Now we are at a turning point. Uniform system-ordered labour markets are undergoing transformation so that on the one hand there are labour markets of "normal" employment defended by labour unions, while on the other hand there is the growing flexible labour market of the risk society. This means, as Beck says, that for a growing part of the labour force the traditional employment system is being replaced by a continuing unstable market. The employment system is becoming more fragmented. Many people are going to work as hired workers, legal or illegal. Many of them are forced to work at home. Some are on constant alert for any short-term or part-time job. Some are working on the so-called grey markets. Others are becoming entrepreneurs (Beck, 1992, pp. 140-150).

These changes create a new relationship between education and work. As Broady (1983) says, school is no longer education for work but for the labour market (Broady, 1983,p. 123). Beck (1992) goes one step further - to him school is not education for work or even for the labour market but for the treshold of the labour market where you might get the keys to the labour market doors. An analysis of the European labour markets shows that we are facing these kinds of problems. (Ashton, 1986; Block, 1990; Lane, 1989). Now we have to ask the question: what are the consequences of the changes in the labour market? I will try to answer the question by presenting some of my own ideas.

First, I would like to emphasize that it is important to analyze the preconditions of any educational policy in the context of the country, history, culture and labour market. From the viewpoint of the general international theorizing it is possible to study some very usual ideas of transformations. (Lash & Urry, 1994). I believe that manpower policy and educational policy in Finland are closely connected to our late modernization and to our restricted role in the international division of labour as well as to our role in international trade.

Secondly, long-lasting mass unemployment is changing the functions of the labour market in many ways. This situation is accelerating both the polarizing process and the fragmentation process (Block, 1990). Big firms are growing bigger but at the same time the number of small firms is also growing. It seems that this is expanding the inner labour market in large enterprises while a growing number of small firms are destabilizing the external market.

In any case, the new situation has made the labour market more rigid and has reduced mobility from the external market to the inner market. This is mainly seen in the growing number of unemployed young and especially in the growing amount of long-term unemployment among the young. These developments demand a rethink of vocational education policy. As we can see in Figure 2, the unemployment rate in Finland reached to the half a million mark. This means that for example in August 1994, the unemployment rate was 19,1 %. As the level of unemployment has risen, youth unemployment has also risen. Now young people under the age of 25 years comprise 19,8 % of the unemployed total. (Ministry of Labour, Employment service Statistic, September 1994; Finnish Labour Review, 1994).

Thirdly Tervo (1994) has shown that for young people in the secondary school, work is seen as living on the outermost fringe of life's arena. My own studies (Väärälä, 1992) show the same (cf. also Siurala, 1994). In Finland both parents usually work outside the home. Children no longer receive work education from their parents. School is now assuming this new role of work education. We can assume that the new situation in both family life and the labour market keeps children from acquiring a work ethos. Access to one's first job has become more difficult than ever. This in turn means that selection procedures on the labour market are becoming more strict (Block, 1990). The new situation has introduced distance in the relationship between educational system and work. The growing low-employment sector also affects the relationship between education and work. The relationship is becoming more abstract, distant and theoretical (Beck, 1992). This is especially true of the Finnish vocational education because it is based on the normal school system.

Fourthly the new developments in society and especially on the labour market have destabilized life careers and everyday life. It is possible to speak about permanent instability in people's lives. We know that for some people this has been familiar for a long time, but nowadays instability is spreading to new groups. In Finland, we have some new empirical data on this phenomenon. In 1993 in Finland there were 1,028,000 people seeking jobs. This means that nearly a half of our manpower (2,5 millions) was actively looking for a new job in the employment exchange. During that year unemployment was over 700 000. Suikkanen (Helsingin Sanomat 21.3.1994) has estimated that on the basis of these rates the labour market in Finland has destabilized very rapidly. According to Suikkanen, the labour market has been divided into four segments:

① stable employment; a decreasing group, about 700,000 people

② unstable employment; an increasing group, about 1-1,3 million people

③ the long-term unemployed and those outside the labour market; a increasing group, about 300,000 people

④ newcomers and those returning to the labour market (students, mobility from home to the labour market); a swelling group, 300,000-400,000 people

There are no strict boundaries between the groups, in fact, all kinds of mobility exist between them. These developments are disturbing. Undoubtedly the economic recession blackens the picture.

VOCATIONAL EDUCATION IN THE NEW CONTEXT

The context of our vocational education system has changed radically. The old system was built on a belief in fullemployment, a stable labour market and a stable life career. In the new situation it is not easy to keep believing in education. The legitimation of the school system is no longer on a firm ground. This new instability is threatening the legitimation of education.

The functions of vocational education are also changing (Järvelä, 1991; Kivinen & al., 1989; Allardt, 1989; see also Watts, 1985; Schilling, 1989). During the seventies and the eighties our vocational education system could guarantee some kind of social mobility and the possibility of getting a job, nowadays it is reinforcing the selection mechanism so that only the well-qualified and suitable can get work. We can assume that the relationship between education and work is becoming weaker. This is a major problem because the transformations at the workplace and in work itself are changing the relationship between the work process and the learning process (Zuboff, 1988; Lash & Urry, 1994; See also Reich, 1992, pp. 225-240). Learning to work requires that learning is organized in a way that corresponds more closely to the actual working life. This is not merely the same as learning by doing, the relationships are much more complicated. As Zuboff says work has become more of a learning process. One reason for this is a growing need for mental processes at work. I would like to emphasize that because of the transformations in the workprocess the traditional school learning process is no longer adequate for socializing people to work. This leads to my major question. How is it possible to organize a new kind of learning process if the vocational education system is losing its contacts with work? The second question is, what role can vocational education play in different social groups and social classes? Are an unstable labour market and a growing low-employment sector polarizing manpower so that people with weak qualifications and poor mobility are the major losers? Traditionally vocational education has been connected with welfare politics. In the nearest future we have to solve this growing problem and decide about the role of a vocational education system in the welfare politics of today.

After these questions regarding education in its larger social context I would now like to proceed to the content of the educational system. Our changing society and labour market and especially the destabilizing process itself are bringing up the question of the long-term value of qualifications. According to Beck (1992) instability demands flexibility at work, but the consequences are much greater because of our standardized society. When the focus of the flexibilizing process is the whole standardized wage work system, the real focus becomes life itself and its structures. Flexibility is the keyword which opens the door to qualifications.(See also Harvey, 1990, pp. 141-172 and Block, 1990, pp. 73-119).

Traditionally we have analyzed qualifications as stable components, but if we look at present developments we have to think of qualifications as transforming the relationship between the work system and people. What challenges to the vocational education system arise from this? The new situation is demanding different kinds of qualifications at different levels. This unstable labour market requires a new kind of socio-cultural thinking and qualifications from its workers. Because of the transformations at work and labour market, workers need to acquire new kinds of innovative qualifications. This means that they have to be educated in the methodology of developing their own working and learning practices. They also have to develop their basic attitudes to work and to their actions. This means that they have to be able to regulate their commitment to work and their motivation to work. The most important thing in this connection is that these new qualifications are tightly bound to basic technical skills and qualifications. I would say that a new and very important phenomenon in this situation is that the traditional technical skills must now be used in new ways on new arenas. Pure technical skill is not enough, it has to be used on varying markets, on varying groups, in varying situations and even developed for use on different arenas.

What is important and interesting from the point of vocational institutions is that the new relationship of qualifications and skills requires that institutions of vocational education are methodologically flexible. It is very important for students that they have a chance to practise these new relationships of qualifications and skills.

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APPENDIX 1

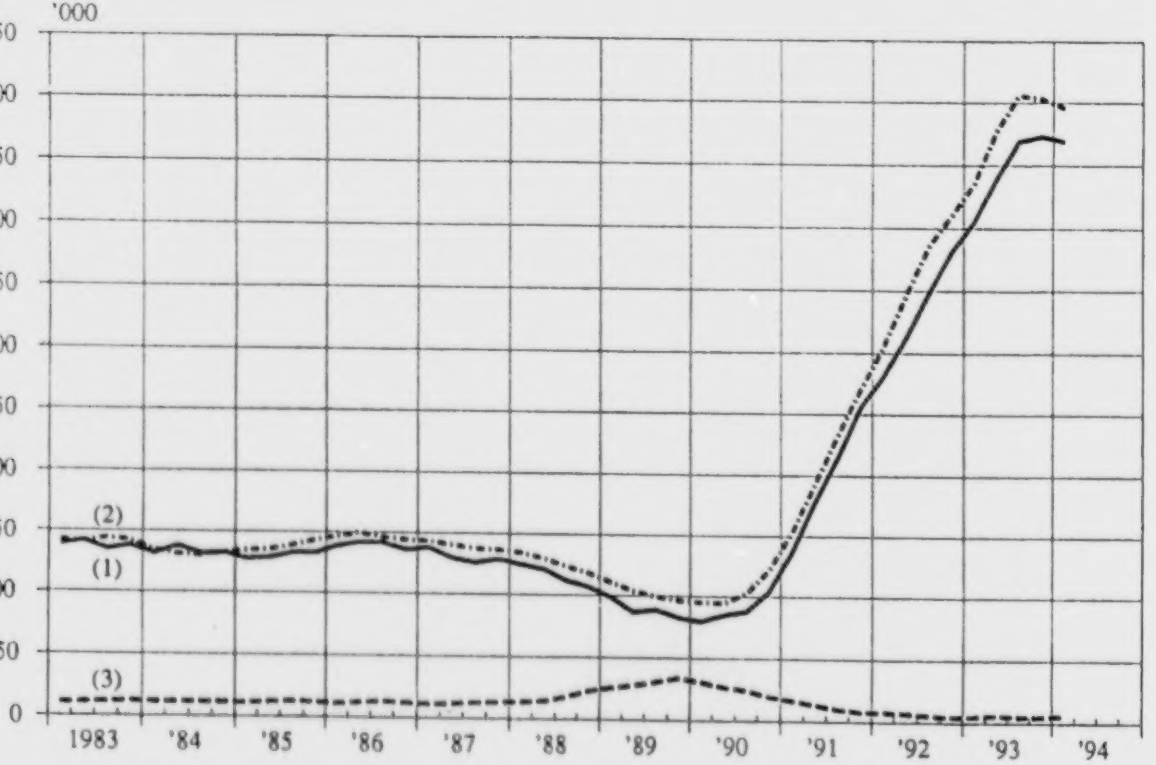

Chart 1. Unemployed persons according to the Labour Force Survey (1), unemployed persons seeking jobs (2) and unfilled vacancies (3), (2) and (3) according to the Employment Service Statistics. Seasonally adjusted quaterly figures.

Source: OECD Economic Outlook June 1994

APPENDIX 2

Annex Table 1. *Unemployment rates: commonly used definitions*[a]

	1991 Unemployment (thousands)	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	Projections 1994	1995
United States[b]	8 443	7.0	6.1	5.8	7.2	7.6	9.7	9.6	7.5	7.2	7.0	6.2	5.5	5.3	5.5	6.7	7.4	6.8	6.3	5.8
Japan	1 360	2.0	2.2	2.1	2.0	2.2	2.3	2.7	2.7	2.6	2.8	2.9	2.5	2.3	2.1	2.1	2.2	2.5	2.9	2.8
Germany	2 602	3.8	3.7	3.2	3.2	4.5	6.4	7.9	7.9	8.0	7.7	7.6	7.6	6.9	6.2	6.7	7.7	8.9	10.0	10.0
France	2 361	4.9	5.2	5.9	6.3	7.4	8.1	8.3	9.7	10.3	10.4	10.5	10.0	9.4	8.9	9.5	10.4	11.7	12.3	12.2
Italy[c]	2 654	7.2	7.3	7.8	7.7	8.5	9.2	10.0	10.1	10.2	11.2	12.1	12.1	12.1	11.5	11.0	11.6	10.4	11.7	11.9
United Kingdom	2 346	5.2	4.9	4.5	6.1	9.1	10.4	11.2	11.4	11.6	11.7	10.3	8.2	6.2	5.9	8.3	10.0	10.3	9.6	8.9
Canada	1 417	8.1	8.3	7.4	7.5	7.6	11.0	11.8	11.2	10.5	9.5	8.8	7.8	7.5	8.1	10.3	11.3	11.2	10.8	10.2
Total of above countries	21 182	5.3	5.0	4.9	5.6	6.4	7.8	8.2	7.5	7.4	7.4	7.0	6.3	5.8	5.8	6.6	7.3	7.3	7.4	7.1
Austria	125	1.4	1.8	1.8	1.6	2.2	3.1	3.7	3.8	3.6	3.1	3.8	3.6	3.1	3.2	3.5	3.6	4.2	4.5	4.6
Belgium	391	6.7	7.2	7.5	7.9	10.2	11.9	13.2	13.2	12.3	11.6	11.3	10.3	9.3	8.7	9.3	10.3	11.9	12.8	12.7
Denmark	296	6.4	7.3	6.2	7.0	9.2	9.8	10.4	10.1	9.0	7.8	7.8	8.6	9.3	9.6	10.5	11.2	12.2	11.0	10.5
Finland	193	5.9	7.3	6.0	4.7	4.9	5.4	5.4	5.2	5.0	5.4	5.1	4.5	3.5	3.5	7.6	13.1	17.9	18.5	17.7
Greece	301	1.7	1.8	1.9	2.8	4.0	5.8	7.8	8.1	7.8	7.4	7.4	7.6	7.4	7.0	7.7	8.7	9.8	10.7	11.0
Iceland	2	0.3	0.4	0.4	0.3	0.4	0.7	1.0	1.3	0.9	0.6	0.5	0.6	1.6	1.8	1.4	3.0	4.3	6.0	6.2
Ireland	210	8.8	8.2	7.1	7.3	9.9	11.4	14.0	15.5	17.4	17.4	17.5	16.7	15.6	13.9	15.6	16.3	16.6	15.7	15.4
Luxembourg	2	0.5	0.8	0.7	0.7	1.0	1.3	1.6	1.7	1.7	1.5	1.7	1.6	1.4	1.3	1.4	1.6	2.1	2.7	2.5
Netherlands	490	3.8	3.8	3.9	4.6	6.8	9.4	11.7	11.7	10.5	9.9	9.5	9.1	8.3	7.5	7.0	6.7	8.1	9.8	9.5
Norway	116	1.4	1.8	1.9	1.7	2.0	2.7	3.4	3.2	2.6	2.0	2.1	3.2	4.9	5.2	5.5	5.9	6.0	5.6	5.2
Portugal	198	7.1	7.9	8.2	8.0	7.7	7.5	7.8	8.6	8.7	8.6	7.1	5.7	5.0	4.7	4.1	4.2	5.5	6.4	6.9
Spain	2 464	5.2	7.0	8.6	11.5	14.3	16.4	18.2	20.1	21.5	21.0	20.5	19.5	17.3	16.3	16.3	18.4	22.7	24.5	24.4
Sweden	122	1.8	2.2	2.1	2.0	2.5	3.2	3.5	3.1	2.9	2.7	2.1	1.8	1.5	1.7	2.9	5.3	8.2	8.0	7.8
Switzerland	39	0.4	0.3	0.3	0.2	0.2	0.4	0.9	1.1	0.9	0.8	0.7	0.6	0.5	0.5	1.1	2.5	4.5	4.5	3.8
Turkey[d]	1 547	9.8	9.8	8.6	8.1	7.1	7.0	7.7	7.6	7.1	7.9	8.3	8.4	8.5	8.0	7.7	7.9	8.7	12.6	14.0
Total of smaller European countries	6 496	5.6	6.2	6.2	6.7	7.5	8.5	9.6	10.0	9.9	9.8	9.7	9.4	8.8	8.3	8.6	9.6	11.5	13.2	13.5
Australia	815	5.6	6.4	6.1	6.0	5.7	7.1	9.9	8.9	8.1	8.0	8.0	7.1	6.1	7.0	9.5	10.7	10.9	10.0	9.2
New Zealand	167	0.6	1.7	1.9	2.7	3.5	3.6	5.3	4.5	3.5	4.0	4.1	5.6	7.1	7.8	10.3	10.3	9.2	8.7	8.1
Total of smaller countries	7 479	5.5	6.2	6.1	6.5	7.3	8.3	9.6	9.8	9.6	9.5	9.5	9.1	8.5	8.2	8.7	9.7	11.4	12.8	12.9
Total OECD	28 660	5.4	5.3	5.2	5.8	6.6	7.9	8.5	8.0	7.9	7.8	7.5	6.9	6.4	6.3	7.0	7.8	8.2	8.5	8.3
OECD Europe	16 458	5.4	5.6	5.6	6.1	7.4	8.5	9.5	9.9	10.0	10.0	9.9	9.3	8.6	8.1	8.6	9.6	10.7	11.7	11.8
EC	14 314	5.2	5.4	5.6	6.3	8.0	9.4	10.4	10.9	11.1	11.2	10.9	10.3	9.3	8.7	9.2	10.3	11.3	12.0	11.9
Total OECD *less* the United States	20 218	4.7	4.9	4.8	5.2	6.1	7.1	8.0	8.2	8.2	8.2	8.1	7.6	7.0	6.6	7.2	8.0	8.8	9.5	9.5
Memorandum items (millions)																				
North America	–	7.8	7.1	7.0	8.5	9.2	12.0	12.1	9.9	9.6	9.5	8.6	7.7	7.5	8.0	9.9	10.9	10.3	9.9	9.2
OECD Europe	–	8.8	9.2	9.3	10.2	12.5	14.4	16.2	17.1	17.3	17.7	17.6	16.8	15.5	14.8	16.5	18.5	20.4	22.4	22.6
EC	–	6.8	7.2	7.5	8.5	10.9	12.8	14.4	15.2	15.6	15.8	15.6	14.8	13.5	12.8	14.3	16.0	17.4	18.6	18.4
Total OECD	–	18.0	18.0	17.8	20.3	23.4	28.4	30.7	29.3	29.2	29.5	28.6	26.7	25.1	24.8	28.7	31.9	33.5	35.3	34.7

[a] For sources and definitions, see "Sources and Methods".

[b] Break in series as of January 1994.

[c] Break in series in 1991 and 1992.

[d] The figures incorporate important revisions to Turkish data; see "Sources and Methods."

Source: Työvoimaministeriö, Työvoimapoliittinen aikakauskirja 2/94

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CRAFT AND PREVOCATIONAL EDUCATION IN PRE-PRIMARY AND PRIMARY EDUCATION

Juhani Peltonen

ABSTRACT

The intention of this article is to clarify the conceptual relationship between craft and prevocational education and to consider the theoretical conditions for implementing craft and prevocational education in pre-primary education. There are two theories of craft education, and in this context, the situation of technical (craft) and vocational education in European countries has been described. The conclusion is, that the traditional vocational education cannot be the purpose of craft education in comprehensive school education. The new vision to innovate the vocational education means that vocational education and especially the teacher training of vocational education may compensate the teacher training of traditional craft education. However, it is very hard to believe, that vocational education could change to an extent that it would be like all-round educational craft education. Finally, modern craft is a good subject to use in pre-primary and primary education, but nowadays there is no fixed tradition between primary and pre-primary education in Finland.

Descriptors: *theory of craft education, prevocational education, pre-primary education.*

INTRODUCTION AND A REVIEW ON THE TRADITION OF CRAFT EDUCATION IN FINLAND

The problem of this article is whether there exists a unique theory of craft education that can show the relationship between craft and prevocational education and craft and pre-primary education. In addition to this, the tradition of education in Finland does not include the tradition of craft and prevocational education in neither pre-primary education nor in pre-primary teacher education.

Therefore the intention of the first section of this article is to describe the nature of craft education tradition in Finland. The second section focuses on the relationship between craft and prevocational education. The third section includes the consideration of the relationship between primary- and pre-primary education and the function of craft education in pre-primary education.

The most difficult problem is the role of prevocational education at the beginning of the first school years. Therefore the function of prevocational education in pre-primary education will be clarified in the fourth and fifth sections. The tradition of craft education in Finland has been for a long time more practical than theoretical. The theoretical development began when teacher training was taken into the university in 1974, twenty years ago.

In Finland there are four universities educating compulsory school teachers in craft as the major subject. The degree the students take is of the MA level. Technical craft subject teachers are educated at the Institute of Teacher Training, University of Turku in Rauma. Earlier the textile craft subject teachers have been educated only at the University of Helsinki. Nowadays they are also educated at the University of Joensuu. Masters of industrial arts and design are educated at the Industrial Arts Institute in Helsinki. Masters of craft are educated at the University of Helsinki, too. The Teacher Training Institute of Åbo Akademi in Vaasa educates Swedish speaking craft teachers.

Although, the before mentioned teachers are subject teachers, they must primarily consider the entire development of the individual pupil. They must not confine their attention only to the pupils' achievement in particular subjects because the pupils develop continuously, not by leaps and bounds. Earlier all craft subject teachers were trained in the faculties of education, when they were trained for comprehensive compulsory school. Nowadays the vocational teacher qualifies for the comprehensive school, too. There is craft or education as the major subject, and correspondingly the other of the two is the second subject at the University of Turku. This combination is a way to balance the overall requirements against the too hard requirements for teacher specialization. Craft is included in the compulsory school curriculum for many reasons:

① The tradition of Finnish educational system is "education through work for work".

② The practical and concrete approaches in education are still valid for overall education.

③ In the modern world with an increasing impact of technology the citizens need practical and technological skills in order to cope with the problems of everyday life and in order to survive.

④ Pupils need prevocational orientation on practical development to guide them in vocational studies.

⑤ Adults need skills to cope with everyday problems at home and their leisure time.

There has been a shift in Finnish craft education in the 1980s:

① From one-sided emphasis on only individual or social aims to balanced aims.

② From strictly prevocational and technical skills to unique holistic producing operation of crafts and to knowledge of theory of craft and producing.

③ From narrow subject matter goals to broader, generally educative views.

Technical work and textile work have partly the same goals. The goals cover use of materials, tools and machines, the basics of relevant consumer skills, designing skills, nurturing the traditional culture of crafts and skills.

The contents of the two subject areas are different. Textile work includes work on textile materials. Technical work includes woodwork, metalwork, engineering (machines and electricity), electronics and technical drawing. Nowadays the orientation of textile and technical work is more in the holistic view in production operations in pure crafts, and more in the project teaching and learning of crafts. When technical work approaches the idea of holistic production education and Hi-Tech -innovation, textile work comes closer to the art and cultural approach.

Teacher training is academic. Teachers acquire the degree of MA in Education. In-service training has - according to the new curricula - brought new technology in the context of crafts as CAD, CNC and robotics.

Training in two- or three-subject combinations, e.g. education, crafts and mathematics, has been experimentally introduced only for teachers of technical craft subjects. Training in two combinations takes 160 credit units. The earlier three-subject combination took 180 study weeks, but nowadays, when crafts and education can be alternative major subjects, it takes 160 c.u., too.

Craft education is a rather new field of social sciences, although it has been a school subject for a long time in many countries. The new scientific status of craft education needs active research work and especially it needs its own theory. The results of new research show, that there are two main theories in craft education: (1) The first theory focuses on the core of the craft subject. (2) The second focuses on the development of craft education and both the theories, e.g., separate craft education from prevocational education. These theories are tools for solving the problem of a possibility to teach craft and prevocational subjects in primary and pre-primary education.

THE PROBLEM OF THE DIFFERENCE BETWEEN CRAFT AND PREVOCATIONAL EDUCATION IN PRIMARY EDUCATION

The Core Theory of Craft Education

The main point in the research on the didactic theory of craft education is to study: a) the subject matter of subject **action** and b) the **contents** of the subject. (Brickhouse, 1990)

The second point is to study the effect of didactics on the outcome of teaching and learning. It is possible to assume, that craft education has its **own pattern of didactic effect** because it has its own theory of subject action and content.

The theory of action in craft education

The basis of craft activities is producing operation. It is a description of the process that begins from the idea on a vision of the product and the process, and that will end in the realised plan of the producing process. The compilation in Figure 1 shows the fundamental elements of the producing theory.

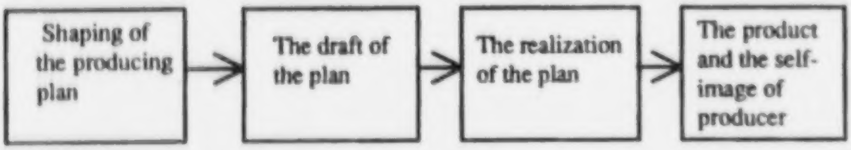
Shaping of the producing plan
The draft of the plan
The realization of the plan
The product and the self-image of producer

Figure 1. *Theory and Pattern of the Producing Operation*

There are many theory model versions of the producing operations: 1) experimental demonstrations, 2) partial skills, 3) planned workprocess and 4) the logical producing project. Every model has its own structure of shaping, draft and realisation. The model of the logical producing project is more extensive than the others. The educational idea of holistic learning is possible to realize with this project model. It focuses on logical planning and the needs of the planner, though the draft and realisation are important elements in the producing operation, too.

The content of truths in a subject

The truths are the second important element in a school subject. There are two dimensions of truths needed in a craft subject: 1) The dimension of corresponding truths and 2) the dimension of prognostic truths.

The poles of the dimension of corresponding truths are natural sciences and arts.

The poles of the dimension of prognostic truths are engineering and humanistic sciences of planning. The combination of the two dimensions describes the field of the content of a craft subject.

The producing person may use four kinds of contents, when he or she is shaping, drafting, realizing and reflecting his or her idea of the wholeness of the producing operation. (Peltonen, 1992). Figure 2 indicates that the character of producing operations will change, if the field of truths has changed. Very often the field of truths is used as knowledge of technology, work, skills and design. Nevertheless, the field may be used as the field of affection, too. From the viewpoint of the primary and lower secondary school curricula it is possible to shape two kinds of traditions in the crafts curriculum: The first is the work and design focused curriculum and the second is the skill and technology focused curriculum.

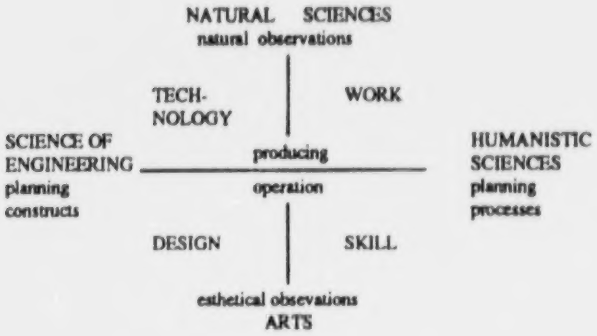
NATURAL SCIENCES
natural observations
TECH-NOLOGY
WORK
SCIENCE OF ENGINEERING
planning constructs
producing
operation
HUMANISTIC SCIENCES
planning processes
DESIGN
SKILL
esthetical obsevations
ARTS

***Figure 2.** The Field of Truths in a Craft Subject*

Both the curricula focus more on subject content than subject action. The subject action curriculum focuses on project learning. The project learning centered curriculum has a strong theory of the own subject action and in that case, it is fairly easy to show the boundaries of the own subject.

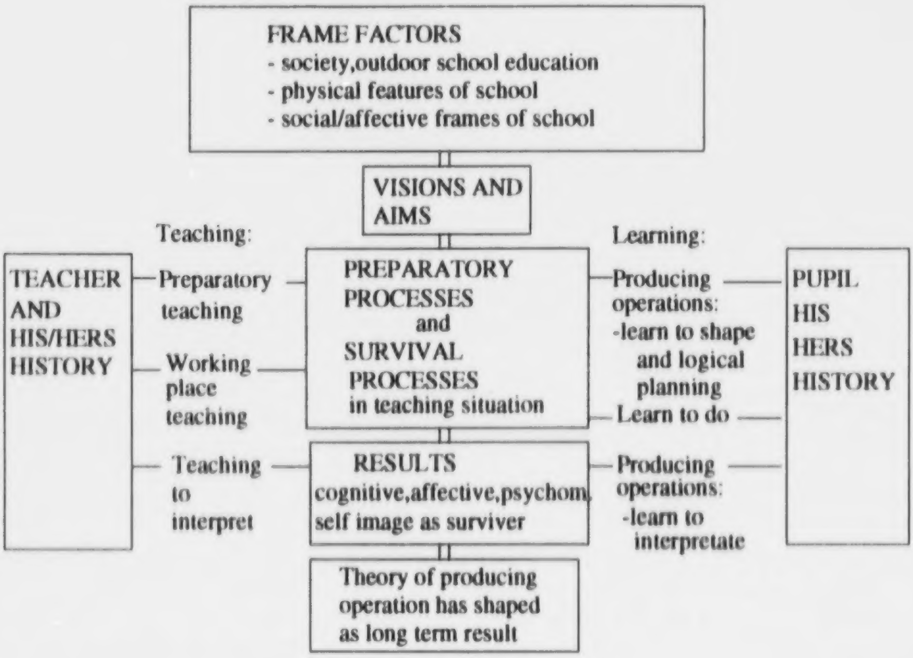
FRAME FACTORS
- society,outdoor school education
- physical features of school
- social/affective frames of school
VISIONS AND AIMS
Teaching:
TEACHER AND HIS/HERS HISTORY
Preparatory teaching
Working place teaching
Teaching to interpret
PREPARATORY PROCESSES and SURVIVAL PROCESSES in teaching situation
RESULTS
cognitive,affective,psychom,
self image as surviver
Theory of producing operation has shaped as long term result
Learning:
Producing operations:
-learn to shape and logical planning
Learn to do
Producing operations:
-learn to interpretate
PUPIL HIS HERS HISTORY

Figure 3. *The Model of Craft Didactics*

The pattern of a didactic effect on craft education

The model of craft didactics shows all the factors that may affect the outcome of the learner (Lahdes, 1991). This is described in Figure 3.

In Figure 3 there are many terms that are familiar to the experts of craft teaching. The teaching and learning process is divided into three parts. It means that a good producing operation needs much preparatory teaching. That again means an active logical shaping of the plan, as well as a technical and aesthetical design of the same plan. The quality of teaching is related to the capacity of preparatory teaching. The definition of craft education is as follows:

Craft education is 1) the vision and purpose-orientated shaping of the wholeness of the producing process, and 2) the vision-orientated transaction/interaction used in anticipating the problems in realizing craft plans and being prepared to solve new problems, and 3) the vision-orientated guidance of the producing process, and 4) finally it is a way to teach sensible learning, survival and to get satisfactory earnings in the practical world.

The core of the model of craft didactics is the factory of the producing operation. The holistic project learning/teaching strategies aim at making the pupil think of the parts of the producing action. The most important goal is to achieve the know how -level of logical shaping of the producing process. Pupils become differentiated very much in craft education due to the teaching of logical shaping of drafts and prototypes. The results of the study of craft education (Peltonen, 1988) showed that the theory of handicraft teaching in the upper level of the comprehensive school differs from the traditional theory of teaching. The traditional theory of teaching is generally described as interactive. The study uses the description "transactional" in connection with the theory of handicraft teaching.

The starting point of the theories of the teachers is that teaching is an impulse system of human action-thinking and -realisation. The two theories differ from each other e.g. because the interactive theory aims at inspiring (adaptive) objective-oriented action. From the point of view of school subjects this means that there is a tendency to lead the pupil into the mastery of objects of language, mathematics, etc. The transactional theory of the teacher, on the other hand, aims at inspiring productive holistic action, where handicraft, art and other school subjects are used to make the pupil create technical products, objects of art, etc.

Adaptive action differs from productive action in that the former requires both many-sided knowledge and adjusted use of language, while productive action requires many-sided creative thinking, mastery of creative logical systems and a capability to build a new reality. It is not enough to adapt oneself to the old reality. Creative **logical systems consist of many levels: imitation logic, composition logic, prototype logic and logic of shaping logic.**

The empirical part of the study (Peltonen, 1988) shows that handicraft teaching in the comprehensive school generally means producing things the imitational way. Other logical systems are hardly known. Moreover, teaching is equal to direct producing with hardly any creative or training phases. Likewise, total absence of product analysis by the pupil can be observed.

The study means that the teaching of logical shaping systems is possible to learn in teacher education. Nowadays craft teacher educators believe that already primary and pre-primary school pupils must learn logical shaping system. It is necessary, because it is the basis to learn more complex logical levels during the comprehensive school. The earlier pupils can learn to shape, the easier it is to plan logically complex drafts in the upper level of the comprehensive school and continuously after that.

The Theory of Developing Craft Education

There are two constructions of theories, which can explain how the development of craft education may move on. The first is the construction of an alternative intention of craft education in the school system. The second is the construction of increasing levels of versatility of the models in craft education.

There are two main dimensions inside the school system that may organize the educational intentions of school subjects on each level of the school system: 1) The dimension of culture and 2) the dimension of adulthood.

The poles of the dimension of culture are the all-round educational pole and the vocational pole. The poles of the dimension of adulthood metamorphose to teen age and to grown-up. Because both the dimensions affect at the same time at every level of the school system, the matter may be viewed with the help of cross tabulating the dimensions. In the first quadrant exist intentions to educate pupils at the same time to become all-round educated and teenager educated. (The concept "teenager educated" means in this connection the education from birth to the beginning of adulthood.) That means, that the craft teacher, who will realise these field of intentions, must use the "normal" theory of craft teaching on the lower and upper levels of the comprehensive school. In the second quadrant exist intentions to educate "pupils" at the same time to become all-round and grown-up educated. In that case, the craft teacher must use the theory of craft education in teacher training. The third quadrant includes intentions to educate "pupils" at the same time to become vocational and teenager educated. If the teacher will achieve these intentions, he/she must use the theory of vocational teaching in the comprehensive school craft education. In that case there are problems because nowadays this theory is an illusion. The fourth quadrant shows intentions to educate "pupils" at the same time to become vocational and grown-up educated. In this field of intentions the teacher must use the theory of vocational teacher education in craft education. This kind of theory is realized at the Institutes of Vocational Teacher Training in Hämeenlinna and Jyväskylä.

The way to derive the alternative models of craft teaching from educational intentions shows two trends of development in the Finnish craft. The first is the trend of **integrating** vocational and all-round educational craft **teacher education** and the second is the trend of **separating** vocational and all-round educational craft education of lower and upper level comprehensive **school learning**.

The integration of teacher training depends on new statutes and decrees on teacher qualifications for the upper level of the comprehensive school. According to these decrees a vocational teacher and a craft subject teacher (MA) are qualified for this teacher post. Nowadays the integration is based on administration but not on theory. The other trend means the question of learning in primary education and this trend is quite clear. There is no tradition in Finland to prepare primary school pupils to learn with a vocational school profession in mind. It is possible that this kind of a phenomenon existed only in the old DDR. A review on technical and vocational education in some European countries may illuminate this statement.

A Review on the Training of Teachers for Technical and Vocational Education in Some European Countries:

The Council for Cultural Co-operation (CDCC, 1988) organized a colloquay on the training of teachers for technical and vocational education. The purpose of this colloquay was to analyze main trends in the integration of technical (craft) education and vocational education as well as the relevance of teacher education.

A report in Austria revealed that although unemployment was worse among teachers generally than in most other professions, there were teacher shortages in various technical (especially high technological) and vocational fields. In Belgium government initiatives had been taken with regard to INSET (In-Service Education and Training), for which national commissions had been set up in both the Dutch-speaking and French-speaking sectors. In Cyprus, some four years ago a plan was introduced linking teachers of technical subjects with commerce and industry. Instructors could go on full or part-time secondments while continuing to receive their salary from the Ministry of Education. There were many advantages to such a system. In Denmark, the state Institution for Teacher Education provided both initial and in-service training for all teachers, including those in or intending to enter the technical and vocational sector. At the Institute the importance of research was currently being emphasized. In Finland, the system was based on a national curriculum in conjunction with school-based curricula. Technical education was provided at 16 plus, first at the school-level and later at the college-level. After the latter it was possible to go into teacher training. The main problems were teacher shortages in all fields but especially technical and vocational education. To attract the best people from industry into teaching, it should be possible to work in industry and teaching concurrently. Another problem was to increase the rate of participation in education to increase the supply of skilled labour. The quality of teacher training was also a problem, which required improvement in the training of teacher trainers.

In France, teachers for upper secondary vocational education were trained at six institutes. Once accepted for training through a competitive examination they received one or two years training as paid civil servants and were then appointed to a school. These six institutions provided mainly initial training, but also INSET, responsibility for which had been transferred to regional education authorities. Recruitment was a problem. In the Federal Republic of Germany, the problem of education was co-ordination. Although education lay within the purview of the 11 states, the Standing Conference of Ministers of Education (Kulturministerkonferenz) ensured a degree of co-ordination. One problem being studied was how to improve the system of teacher selection since not all could be recruited. Another was the development of INSET to ensure that teachers in technical and vocational education kept up-to-date. In Greece, an important problem was the training of trainers in high-technology subjects. Five to six month seminars were organized continuously, led by trainers from industry and professors from technological universities. In Iceland, technical and vocational education had been integrated into the overall secondary system governed by a single general law. However, it suffered in competition with the higher prestige general upper secondary education. INSET in the light of technological developments was a particular area of interest. In Ireland, the trend at secondary level was one of concern with technological education as a whole rather than narrow technical specialization. There was a need to redress the balance in the schools between teachers on the general side and those on the technological side in favour of the latter, perhaps through re-training. However, this solution would have the disadvantage of restricting opportunities for the entrants. Curriculum development and teacher training were the priorities. In Italy, there was no specific initial training for secondary level teachers, but an experimental "training year" had been introduced. INSET provision was very varied but a current concern was how to introduce new, especially technology-related subjects into the curriculum. In Malta, success in attracting high technology industry was taxing the technical and vocational education system - especially as far as recruiting teachers with the right experience was concerned. With the help of the United Nations Industrial Development Organisation (UNIDO), an experimental instructor training centre has just been established. In Netherlands, one full-time and five part-time institutes provided initial training for technical and vocational teachers, INSET and special courses. The main problems were recruitment and co-ordinating the explosive growth of INSET. The curriculum was being up-dated to take account of new technical developments, and the re-organisation of lower and upper secondary education was being discussed with a view to its possible integration into a comprehensive system at the lower level and to increasing specialization at the upper level. In Norway, the College of Education for Teachers of Vocational Subjects provided theoretical and practical initial and in-service training. Two problems were recruiting teachers skilled in the new, expanding trades and up-dating. In Portugal, a new department had been set up in the Ministry of Education to deal with technological, artistic and vocational education. The most pressing problems were the diversity of initial training of teachers, INSET, the shortage of qualified teachers in this area, and the higher prestige accorded to academic studies. In San Marino, there was no distinction or separation between general and technical/vocational education and teachers all received the same "integrated" training as a basis for later specialised training. This made for shared experience and facilitated team-work. University-based counsellors worked closely with teachers in schools, advising as necessary. In Sweden, a new upper secondary vocational education scheme had just been launched which would increase the upper secondary education budget by a third. Better teacher training, and especially INSET, was a high priority, as well as recruitment. In Switzerland, a new international centre had been set up to provide teachers and others with "integrated" further training which would include advanced research and documentation facilities and every possible aid to effective in-service training closely linked with initial training, in accordance with the latest ideas.

In the United Kingdom two main trends existed. First in England and Wales, the major change was the introduction of the national curriculum, of which technological education was a compulsory element for all pupils aged 5-16. The challenge was to find the teachers for it. Specific vocational training was only provided at post-16 level. Problems included a serious shortage of teachers, particularly in craft, design and technology (CDT), science and mathematics. The numbers required for the turn of the century amounted to one in five of those completing higher education. Second, in Scotland, the situation was very similar to that described for England and Wales. In the past it had been possible to recruit teachers for technological education rapidly from industry, whereas the requirement now was a 4-year degree course. Problems were teacher shortages and provision of INSET in a context of rapid technological change.

Summa summarum: The general trend in European Countries is the question what should be included in the program of initial training of teachers in technical and vocational education. In particular, how much attention should be devoted to general subjects, how much to information technology, how much to training for special educational needs (e.g. of the disabled, slow learners, the socially deprived) and how much to teaching practice. The fact is, that in vocational education initial training should provide general knowledge, pedagogical and didactic skills and teaching practice. This means, that there is a trend towards more general content in training teachers for technical and vocational education which has arisen from the need to prepare teachers and pupils to adapt to new situations, knowledge and skills throughout their lives and to understand social and economic change. Indeed the twin objectives of technical and vocational education were to raise the standard of general education and to provide professional skills. All that means, that in the near future, the development of craft and vocational education is aiming at the same form of teacher education. The old-fashioned vocational education will compensate the whole tradition of craft education. The dilemma of this trend of development is, will there be any traditional vocational education left in the near future? How far can the all-round craft teacher compensate the technological specialist? In any case, the change of vocational education to "the all-round vocational craft education" is the precondition for the vocational teacher being able to teach in pre-primary education, too.

The Construction of Cumulative Levels of Craft Education:

The second construction of theories of craft education - as mentioned before - is the construction of cumulative levels of versatile models in craft education. The basis of this construction is the holistic theory of a relationship between subject action, subject content, subject teaching and subject learning. The Figure 4 shows the idea of construction of the levels of versatility.

	THEORIES OF SUBJECT:		
PRODUCING OPERATION	CONTENT TRUTHS	TEACHING STRATEGIES	LEARNING STRATEGIES
FIRST LEVEL experimental demonstrations and the use of equipments	objective knowledge of materials, energy control information, etc.	model teaching behaviorism	serialistic learning input-output learning
SECOND LEVEL partial skills	objective and spesific knowledge schemas and partial rutines	phase, period and stage teaching cms-strategies	trial-error learning schema learning skill learning
THIRD LEVEL planned workprocesses	reflective knowledge of workprocesses and the conditions of changes and functions	reflective teaching	holistic learning problem solving learning
FOURTH LEVEL logical producing project	knowledge of shaping and planning logics and knowledge of levels of the truths of the craft subject	project teaching	situation learning problem solving and intuitive shaping learning

Figure 4. *The Construction of Cumulative Levels of Versatility in Craft Education*

The idea of the construction presented in the Figure 4 is that the abstract in craft education has developed in a cumulative way during more than one hundred years.

The figure is the second tool for evaluating the difference between craft and prevocational education. Because of the main development of vocational and technical education in European countries it is possible to see that traditional vocational education has developed inside the first two levels of the construction. The weak point of this statement is, that it is difficult to generalize about the requirements in view of the differences between and within national systems, e.g. multiple and precisely defined curricula and different conceptions of entry to technical and vocational education. Indeed, technical and vocational education could not be regarded as homogenous. It included many forms such as the training of highly skilled engineers, training for semi-skilled workers and more recently introduced types of training with a more and less general remedial function. Moreover, teachers often had to cope with different national groups or "micro-cultures" in vocational and technical schools that were often the source of conflicting assumptions about what was being taught. It is pointed out that it is not necessarily true that the technical and vocational school population represents the lowest achievers. In certain countries the decision to learn a trade is a positive choice in many cases with the result that the population is heterogenous. This is the more so in countries that had a policy of integrating disabled learners into the mainstream. However, the new intention of vocational education to expand the direction of traditional all-round craft education means, that the whole theory of (pre)vocational education must orientate towards levels of three and four, if the vocational and prevocational will compensate traditional craft education in primary and pre-primary education.

Conclusions on the Comparison of Craft and (Pre)Vocational Education

The use of two theories of craft education shows that vocational education cannot be the purpose of craft education, because craft education cannot aim at 1) specific correctness of technical product, 2) specific and deeply trained skills, 3) economical profit and 4) knowledge of economical trends in the employment field.

It is hard to believe, that vocational education could expand to compensate the theories and practice of the modern craft education, although teacher training will focus on slow learners and all-round educational goals. It is hard to believe, too, that vocational education could spend more time to enhance learning of shaping and planning the whole of the producing operation and the pupils' spirit of enterprise, etc.

The result of this evaluation is, that modern craft education cannot be merely prevocational education and it cannot compensate vocational education at the secondary level of the school system. Vocational education cannot expand so much, that it can compensate modern craft education, although the new statute and decrees of the qualification of teachers gives administrative frames for this purpose.

THE RELATIONSHIP OF PRIMARY AND PRE-PRIMARY EDUCATION AND THE FUNCTION OF CRAFT EDUCATION

The comparison of primary and pre-primary education in Finland is very complex. The main problem is whether there exists any fixed form of pre-primary education in Finland. Nowadays, it is easy to answer this question, i.e. there is no fixed form of primary education. In the area of teacher training in primary education the situation is somewhat different. There are two kinds of teacher training in Finland, and the curriculum of the training is nearly the same. Although the curricula of many kindergartens vary a lot, the main goals are very close to the goals of the lower level of the comprehensive school.

In the other European countries the tradition of (compulsory) primary education is quite fixed and in Finland the intention is by orientation about the same, but no administrative decisions have been made.

Inspite of separation of the Finnish primary and pre-primary education many of the experimentations in pre-primary education have shown that only a few of the more desirable goals are 1) to get acceptance 2) justice as to rules and 3) holistic and problem solving learning. (Pohjanoksa, 1994)

One of the main goals is "the holistic and problem solving learning" in pre-primary education. This means - evaluated with the theory of craft education - that modern craft education is a valuable tool for the pre-primary educator. Especially the Figure 4 shows that imaginary, creative thinking, which can both shape and break mental images and drafts, is an important part of the producing operation in modern craft. As mentioned before, it is necessary for the pupil to learn this basic way of thinking and acting as early as possible. Modern craft education can be a new solution for planning the curriculum of pre-primary education.

After the theoretical analysis of craft and prevocational education, it is easy to say that there are no problems what so ever. There is no prevocational education in Finland. But if it could exist, "common sense" would say that children from five to six years old, cannot orientate themselves to the adult future and to the future of employment.

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GENDER STRATIFICATION IN VOCATIONAL EDUCATION AND THE LABOUR FORCE IN FINLAND

Marja-Leena Stenström

ABSTRACT

The purpose of this article is to give an overview of gender stratification in Finnish vocational education and labour force. The data highlight the enrolment patterns of Finnish vocational programmes, the transition from school to work and the Finnish labour force. The target of vocational education policy in Finland has been that at least 30% of the minority gender would be represented in all occupational fields. However, vocational education often follows the gender-segregated patterns of the labour force. The findings showed that there are still gender differences in vocational educational and in occupational choices. Women and men make traditional choices both in education and in the labour force. Female-intensive fields of vocational education and the labour force included the clothing industry, home and institutional economics, and social services. Correspondingly, male programmes were heat, water and ventilation technology, mechanical engineering, vehicle and transportation technology, electrical engineering, forestry and seafaring.

Descriptors: *gender, stratification, equity, education, the labour force*

INTRODUCTION

One of the main principles in Finnish education policy is that post-compulsory education is available to the whole age group. More than half of comprehensive school leavers continue their studies in the general upper secondary school and nearly 40 per cent in vocational education. On the whole, about 90 per cent of comprehensive and general upper secondary school leavers continue their studies (Ministry of Education, 1994).

Currently, Finnish vocational training programmes are grouped by occupational sector. Vocational education is organized in 26 branches including over 200 specialization lines. These branches lead to three different levels of vocational qualifications: school-level certificates, college-level diplomas, and higher vocational degrees (National Board of Education, 1991).

The target of Finnish vocational education has been that at least 30 % of the minority gender would be represented in all occupational fields (Parviainen & Kyrö, 1990). However, vocational education often follows the gender-segregated patterns of the labour force. Girls choose service and care branches, boys go for technical and vocational schools. This division has remained almost unchanged for the last 40 years and is clearest at the lowest levels of vocational education (Anttalainen, 1993).

The structure of industries has undergone major changes in Finland during the past few decades. The change from an agrarian-industrial to a post-industrial service society has meant a rapid expansion in female-dominated occupations. This has resulted in women participating more and more in working life (Haavio & Malm, 1993). Since the 1950s and 1960s Finnish women have become increasingly dependent on their own paid work. In the 1950s, women entered the non-agricultural labour market (e.g. industry). Since the 1960s the public sector has been women's most important employer, having taken over some of the traditional key tasks of the home (e.g. childcare and education). Women's entry into the labour market has been an answer to the prevailing social circumstances and the need of labour, not the outcome of an equal opportunities policy. Equal opportunity policies were actively pursued during the 1970s and 1980s to abolish discrimination in the labour market (Allen, 1993).

The purpose of this article is to give an overview of gender stratification in Finnish vocational education and labour force, especially as regards the transition from school to work. The specific research problems are the following:

① What kinds of gender-related differences exist in students' choices in vocational education?

② What kinds of gender-related differences exist in transition from school to work?

③ What kinds of gender-related differences exist in occupational fields?

The data highlight the enrolment patterns of Finnish vocational programmes, the transition from school to work and the Finnish labour force. They are derived from the official Finnish statistics and cover the whole of Finland. This paper is based mainly on the follow-up data which Statistics Finland gathered in 1990 concerning the labour force status of the 1985 school leavers and the level of their educational qualifications five years later. This paper describes only the data relating to vocational institution leavers.

OVERVIEW OF GENDER STRATIFICATION IN EDUCATION AND THE LABOUR FORCE

Theories of gender inequality focus on societal structures and processes that affect a variety of areas among men and women in a society (Almquist, 1991). Several studies of occupational choice use gender as a critical component in the decision-making process. One of them is Gottfredson's theory (1981), which presents a circumscription formulation of career choice. Individuals gradually build up a space of acceptable occupations on the basis of four general criteria: gender, status, field of interest and accessibility of training and jobs. In developmental terms, the gender criterion appears first, the social status criterion after that while the psychological criterion, the field of interest, is the third criterion to emerge. Spanish research (Sastre & Mullet, 1992) showed that Gottfredson's theory has the greatest validity for girls.

Another gender-related viewpoint on occupational choices is the concept of closure as elaborated in the Neo-Weberian tradition. Neo-Weberians have used the concept in the analysis of professionalization, seen by them as a strategy of social closure. Professionalization has also been related to power, the various institutional forms of occupational control. Therefore women's professional jobs are often semi-professional (Birkelund, 1992). Female-dominated occupations tend to have lower wages, more restricted possibilities for occupational advancement, and less on-the-job training than do occupations dominated by males (Charles, 1992).

According to Haavio-Mannila (1990), the division of labour between the genders is based on the gender role stereotypes originating with the family and other social institutions, including parenthood. The stereotypical feminine jobs follow the same patterns as women's traditional tasks at home. Female jobs are often related to service and taking care of others and to teaching. The traditional male-intensive jobs include more often management duties and are related to technology and productivity.

CHOICES IN VOCATIONAL EDUCATION

In Finland, the admission of new students to vocational education is nationally organized by the joint selection procedures. They include nearly all the programmes which can be entered directly after comprehensive or general upper secondary education. Bonus points for gender are given to applicants choosing a programme where the majority of the opposite gender exceeds two thirds. This arrangement is intended to encourage students to make nontraditional educational choices (National Board of Education, 1991).

In general, male students continue their post-comprehensive studies in vocational institutions, whereas female students go to the general upper secondary schools. Statistics Finland (1994) indicates that in 1992 female students (61 %) continue their studies in the general upper secondary schools more often than do male students (42 %), who in their turn (43 %) continue their studies in vocational institutions more often than do female students (23 %). The proportion of those proceeding to the upper secondary school has increased in recent years, while that of those proceeding to vocational schools has remained at around a third.

Table 1 presents male and female students' choices in Finnish vocational programmes in 1990 and 1993. The fields of vocational study have been divided into men's (91-100 per cent), male-dominated (61-90 per cent), mixed (41-60 per cent), female dominated (61-90 per cent) and women's fields (91-100 per cent) according to the proportion of male and female students. The data show that the fields of vocational study are differentiated by gender. Of all the students entering vocational institutions, less than 5 per cent were in the mixed fields with 41-60 per cent of men and women. Female-dominated fields included the clothing industry, home and institutional economics and the social services. Correspondingly, male-dominated fields were heat, water and ventilation engineering, mechanical engineering, vehicle and transportation technology, electrical engineering, woodworking and the construction industry. Typically, service and caring professions are female areas, whereas engineering, technology and primary production are male areas. In general, changes are slow. The statistics indicated that there were few changes in the gender-dominated fields in the short time between 1990 and 1993. However, it seems that men's fields have increased.

The above findings described the distribution of students' vocational education. A close exploration of the level of their vocational qualifications in 1993 indicated that there are additional differences between the genders in the educational level of such qualifications. More than half of the students were females in school- (55 %) and college/institute-level (66 %) education, while the majority in higher vocational education (78 %) and the polytechnics (52 %) were male students. These findings are similar to those of a variety of empirical and theoretical studies.

Research on the commercial education programme has indicated (Stenström, 1992, 1993) that men applied to the college level three times more often than women regardless of their achievement, that is, they ventured to apply to a higher educational level than females despite their lower school achievement. This result supports Gottfredson's theory (1981) of occupational aspirations and choice because the effect of gender was stronger than the effect of status as measured by father's education. Further, the results verified earlier research findings which seemed to suggest that females preferred jobs which had lower status than male jobs.

Also, the motives for choosing an occupation seemed to differ by gender. Men valued the high status of an occupation whereas women valued the

Table 1. *Fields of Vocational Education Chosen by Male and Female Finnish Students in 1993*

1990		**1993**
	Men's fields (91-100 %)	
Heat, water and ventilation		Heat, water and ventilation
Mechanical engineering		Mechanical engineering
Vehicles and transportation		Electrical engineering
Electrical engineering		Vehicles and transportation
Woodworking		Forestry and wood industry
Construction industry		Woodworking
		Construction industry
	Male-dominated (61-90 %)	
Fishing		Fishing
Forestry and wood industry		Seafaring
Seafaring		Surveying
Surface treatment		Surface treatment
Agriculture		Printing industry
Surveying		Agriculture
	Mixed (41-60 %)	
Chemical engineering		Chemical engineering
Printing industry		Media studies
Dairying		Dairying
		Food processing
	Female-dominated (61-90 %)	
Food processing		Commerce and administration
Hotel and catering		Hotel and catering
Textile industry		Crafts and design
Commerce and administration		Horticulture
Horticulture		Health care
Crafts and design		
	Women's fields (91-100 %)	
Health care		Textile industry
Social services		Social services
Home and institutional economics		Home and institutional economics
Clothing industry		Clothing industry

Sources: Tilastokeskus. (1991). *Ammatillisten oppilaitosten oppilaiksi otetut ja oppilaat 1990* [Students of vocational institutions 1990]. Koulutus ja tutkimus 4. Helsinki: Tilastokeskus.
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opportunity to work with people. For females, on the other hand, working conditions had greater importance. Furthermore, the males considered career prospects and independent work important, while the females emphasized the possibility to work with people and the desire to help them (Stenström, 1993).

Kauppinen-Toropainen (1993) argues that most occupations have gender labels. Some occupations are associated with masculine characteristics and some with feminine characteristics. Technical and managerial jobs have been seen as suitable for men, requiring as they do technical expertise, rationality and authority. Caring work and human relations jobs have been seen suitable for women, requiring as they do socialibility, consideration and adaptibility.

TRANSITION FROM SCHOOL TO WORK

One way to describe gender stratification is to examine the transition from school to work. Statistics Finland collected follow-up data in 1990 about people who graduated in 1985. Table 2 describes patterns of vocational studies five years later.

The results showed that more men (84 %) than women (75 %) had the same certificate five years later. Typically, women had taken up further studies. The female leavers of the male dominated and women's fields had mostly studied. They had taken a different qualification both at the same educational level and at a different level than men. The reason might be that the economic recession in the early 1990s caused a rapid deterioration in the employment situation. The recession touched mainly male-dominated industries. Later, its effects have centered on female-dominated and women's industries.

Studies have indicated that the person who makes a nontraditional choice needs strong self-confidence. Further, the structure and patterns of the labour market do not tend to support nontraditional choices. Nontraditional choices require workers to meet a traditional working culture with its own regulations and social norms.

Table 3 indicates the type of transition from school to work five years after a graduation in 1985, when unemployment started to rise in Finland. Some areas such as construction industry and surface treatment had a high unemployment rate.

***Table 2.** The Vocational Diploma in 1990 of Male and Female 1985 Vocational Institution Leavers*

Field of study 1985	Qualification in 1990				Total	
	Same		Different			
	Females	Males	Females	Males	Females	Males
	%	%	%	%	N	N
Men's fields (men 91-100%)						
Heat, water and ventilation	100.0	93.8	0.0	6.2	10	672
Vehicles and transportation	88.6	83.2	11.4	16.8	44	2938
Mechanical engineering	76.5	83.7	23.5	16.3	132	5681
Woodworking	75.0	91.2	8.8	25.0	36	964
Electrical engineering	83.2	82.7	16.8	17.3	220	4515
Forestry and wood industry	50.8	69.2	49.2	30.8	65	1105
Subtotal	77.5	83.2	22.5	16.8	507	15875
Male-dominated (61-90 %)						
Construction industry	82.0	93.3	6.7	18.0	323	2690
Seafaring	78.4	72.0	21.6	28.0	37	282
Fishing	83.3	77.4	16.7	22.6	6	31
Surface treatment	83.7	90.9	9.1	16.3	43	164
Agriculture	63.2	80.7	36.8	19.3	877	2075
Textile industry	57.1	78.6	42.6	21.4	7	14
Subtotal	69.1	87.0	30.9	13.0	1293	5256
Mixed (41-60 %)						
Printing industry	92.8	94.4	7.2	5.6	153	198
Chemical engineering	82.9	84.4	15.6	17.1	474	505
Dairying	43.8	66.7	56.2	33.3	48	39
Surveying	87.3	76.7	12.7	23.3	118	90
Subtotal	83.1	85.1	16.9	14.9	793	832
Female-dominated (61-90 %)						
Commerce and administration	89.3	84.7	24.6	15.3	280	157
Crafts and design	78.7	58.8	21.3	41.2	1346	484
Horticulture	62.7	73.6	37.3	26.4	483	201
Food processing	75.4	84.7	24.6	15.3	280	157
Hotel and catering	74.2	76.1	25.8	23.9	3988	980
Subtotal	81.6	84.1	18.4	15.9	15173	5358
Women's fields (91-100 %)						
Health care	81.6	84.5	18.4	15.5	8285	695
Social services	85.1	83.0	14.9	17.0	1146	47
Clothing industry	68.4	100.0	31.6	0.0	1277	19
Home and institutional economics	45.0	58.8	55.0	41.2	5787	17
Subtotal	68.0	84.2	32.0	15.8	16495	778

Source: Tilastokeskus. (1993). *Koulusta työelämään*. Tutkinnon suorittaneiden jatko-opinnot ja työhön sijoittuminen [From school to work. Further studies and employment status of vocational school leavers]. Koulutus 12. Helsinki: Hakapaino.

Table 3. *Activities of Male and Female 1985 Vocational Institution Leavers Five Years Later*

Field of study 1985	Activity 1990					
	Employed		Unemployed		Other *)	
	F	M	F	M	F	M
	%	%	%	%	%	%
Men's fields (91-100 %)						
Heat, water and ventilation	90.0	87.3	10.0	5.2	0.0	7.5
Vehicles and transportation	84.6	86.5	5.1	6.5	10.3	7.0
Mechanical engineering	86.1	85.0	1.0	7.8	12.9	7.2
Woodworking	66.7	84.2	11.1	7.2	22.2	8.6
Electrical engineering	84.7	85.9	1.1	4.3	14.2	9.7
Forestry and wood industry	78.8	80.6	9.1	7.2	12.1	12.2
Subtotal	83.5	85.3	3.0	6.4	13.5	8.3
Male-dominated (61-90 %)						
Construction industry	83.8	82.2	2.2	11.0	14.0	6.8
Seafaring	69.0	74.4	6.9	9.4	24.1	16.2
Fishing	80.0	95.8	0.0	0.0	20.0	4.2
Surface treatment	66.7	77.2	13.9	16.8	19.4	6.0
Agriculture	78.7	89.2	1.2	2.9	19.9	7.9
Textile industry	75.0	90.9	0.0	9.1	25.0	0.0
Subtotal	79.4	84.3	2.3	8.1	18.3	7.6
Mixed (41-60 %)						
Printing industry	81.7	90.9	2.8	1.6	15.5	7.5
Chemical engineering	80.9	88.0	2.5	5.9	16.6	6.1
Dairying	95.2	96.1	0.0	3.9	4.8	0.0
Surveying	85.4	89.9	6.8	2.1	7.8	7.2
Subtotal	82.2	89.2	3.2	4.4	14.6	6.4
Female-dominated (61-90 %)						
Commerce and administration	84.3	90.0	3.7	2.8	12.0	7.2
Crafts and design	67.2	81.1	5.2	7.9	27.6	11.0
Horticulture	74.3	81.8	4.6	6.7	21.1	11.5
Food processing	80.6	91.0	1.9	4.5	17.5	4.5
Hotel and catering	74.4	85.9	6.3	5.6	19.3	8.5
Subtotal	80.5	88.3	4.4	3.9	15.1	7.8
Women's fields (91-100 %)						
Health care	75.0	90.9	0.0	9.1	25.0	0.0
Social services	82.9	94.9	0.9	0.0	16.2	5.1
Clothing industry	72.3	84.2	5.7	5.3	22.0	10.5
Home and institutional economics	67.9	70.0	5.3	10.0	29.9	20.0
Subtotal	78.7	91.0	2.1	1.2	19.2	7.8

* means mostly studying

Source: Tilastokeskus. (1993). *Koulusta työelämään*. Tutkinnon suorittaneiden jatko-opinnot ja työhön sijoittuminen 1990 [From school to work Further studies and employment status of vocational school leavers]. Koulutus 12. Helsinki: Hakapaino.

We see that male and female students choose somewhat different fields of study.

The results showed that men (86 %) were employed more often than women (80 %) irrespective of the vocational programmes they had completed. Also, men were unemployed more often than women. Women seemed to be more interested in studying in almost every occupational area. However, there were no big differences between male and female fields in terms of employment status except in case of women's fields where women were studying more often than men. In general, nontraditional choices are more often associated with unemployment or with further studies taken up because of the unemployment than are traditional choices. Although the results did not support such assumptions, they might be one explanation for the persistence of traditional educational choices and for women's further studies.

EMPLOYMENT PATTERNS

The segregation of men and women at work occurs along many dimensions. We see that the Finnish labour market has two different labour forces. Most (85 %) of those employed in the service trades are female while 89% of those employed in engineering-related jobs are male. The increase in women's employment has been linked to a broadening of the service sector. Women work in the public sector more often than men. Most of these women are employed by local administration, most men being in government service. Finnish local administration is largely responsible for health care, social work and education (Anttalainen, 1993). Table 4 indicates how the Finnish occupational fields have been differentiated by gender in 1992.

The statistics from the year 1990 concern all those who left school in 1985 and those from the year of 1993 all employed persons in Finland. In 1990, jobs in technology, science, the law, the humanities and the arts also included health care and social work. Both sets of statistics describing Finnish labour force patterns indicate that women's work is concentrated in social and personal services, whereas men's areas are industry-related. Women and men work in different fields and, even within the same field, in different positions. One of the widespread features of the workplace is that jobs are gender-typed as women's and men's work respectively (West & Zimmerman, 1991). Occupational gender segregation is one feature in the segmentation of the labour market. Usually this means that women and men working in different occupations have different duties.

Women's weaker position in the labour force is manifested also in their salaries. Women's salaries are 73 per cent of men's salaries. Women who have undergone upper secondary vocational education earn 79 per cent of men's

Table 4. *The Percentage of Male and Female Employees in Various Industries and Occupations in 1990 and 1993*

Industry or occupation	1990 Females %	Males %	1993 Females %	Males %
Technical, scientific,juridical, humanistic and artistic work	37.6	22.5	12.8	16.8
Health care and social work	-	-	21.9	2.6
Managerial, administrative and clerical work	24.3	4.9	22.6	11.6
Commerce	6.8	8.4	11.2	8.1
Agriculture, forestry and fishing	4.8	6.8	5.8	11.2
Transport and communication	2.1	7.2	2.4	9.6
Manufacturing, machine operation, mining and quarrying	6.0	37.9	7.5	32.3
Service work	17.4	10.9	15.4	7.3
Unknown	1.0	1.4	0.4	0.5
Unknown occupation	1.0	1.4	1.1	
Total	100.0	100.0	100.0	100.0

Source: Tilastokeskus. (1993). *Koulusta työelämään. Tutkinnon suorittaneiden jatko-opinnot ja työhön sijoittuminen 1990* [From school to work. Further studies and employment status of vocational school leavers]. Koulutus 12. Helsinki: Hakapaino.
Tilastokeskus. (1994). *Työvoimatilasto* [Results of the Labour Force Survey from the Years 1980-1993]. Työmarkkinat 17. Helsinki: Tilastokeskus.

salaries (Lahelma, 1992). Women's wages and salaries are lower both in industry and in service and clerical work.

CONCLUSION

The results showed that there are still gender differences in vocational educational and in occupational choices. Women and men make traditional choices both in education and in the labour force. Female-intensive fields of vocational education included the clothing industry, home and institutional economics and social services. Correspondingly, male programmes were heat, water and ventilation engineering, mechanical engineering, vehicle and transportation technology, electrical engineering, woodworking and the construction industry.

Gender-related differences were also observed in the level of vocational qualifications. Over half of the students were females in school- and college-level education, while the majority in higher vocational education and the polytechnics were male students. Further, women's work was concentrated in social and personal services, whereas men's areas were industry-related. Finnish statistics indicated that vocational education often follows the gender-segregated patterns of the labour force. The follow-up study revealed that five years from graduation, more men than women were employed. Correspondingly, women seemed to be more interested in studying in almost every occupational area.

Despite women's qualifications and their participation in working life, their position on the labour market is not equal to men's. Although Finnish women have a relatively strong position and long traditions of being active in working life, there are few women in the top positions of the labour force. One explanation of gender differences in educational and occupational choices is based on the viewpoint that visible and concrete attributes, such as gender, are built into one's self-concept and influence career preferences at an early age (cf. Gottfredson, 1981). Another explanation is that women and men are more similar than different in most work-related attitudes and perceptions, and differences in behaviour are as likely to arise from organizational and societal factors (Hackett, Lent & Greenhaus, 1991).

According to Julkunen (1990), even a modern welfare-state like Finland has been unable to solve the fundamental contradiction in women's life: production vs. reproduction. Working life and the family are institutionally separated, but in individuals' daily lives they are combined. Women are responsible for social reproduction both in their private lives and on the labour market (Rantalaiho, 1993).

A basic reason for gender differentiation are the values of society and working life. A study (Lasonen, Burge & Finch, 1994) of Finnish vocational teachers' gender-role attitudes indicated that male teachers followed the patterns associated with the gender-segregated division of labour, whereas females' gender roles were more compatible with progressive equity legislation policies. Further, many other studies have indicated that the differences between female and male fields and occupational status reflect the gender division of the culture as well as the features of the gender system (Burge & Stenström, 1995; Lips, 1993). However, student counselling and student selection can be used as the means to equalize gender distribution. Another way is to try to equalize the application pattern of the students through the recruitment and retention of gender nontraditionals. Burge and Culver (1993) have found that barriers for gender equity can be found in vocational education and the workplace. These barriers can be divided into three categories: structural barriers, external barriers and support availability barriers. Strategies to reduce these barriers have to include the recruitment of learners in areas nontraditional to their gender and the promotion of teacher and student interaction.

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IN SEARCH OF THE WOMAN MANAGER

Lemmikki Taalas - Maarit Virolainen

ABSTRACT

Women's working environment is conceptualized in a Bourdieuan sense as fields. Women managers work as a minority in the field of management. In this article we ask how symbolic and cultural meanings and expectations in the field of gender and in the field of management and leadership affect women. The discussion is based on our study of four Finnish women managers who work at the very top of organizations employing hundreds or thousands of people.

Descriptors: *woman manager, gender, social field*

PROLOGUE

A father and his son were driving a car in the countryside. They were having a lively conversation as the car arrived at a rail road crossing. Somehow the young man did not see that a train was approaching the crossing at the same time. Passengers on the train felt the emergency brakes pulled down and the train starting to slow down and finally stop 100 meters after they had passed the crossing where father and son were with their car.

Just a few minutes after the devastating accident, the fire brigade arrived, followed by an ambulance. Father and son were pulled out of the badly damaged car, and both were rushed to the nearest hospital. By the time the ambulance got to the hospital, the father could not be helped anymore. The son was in a critical condition. Only an emergency surgery might save his life.

Two doctors, a surgeon and a training surgeon, were preparing themselves for an extremely difficult operation. They both knew that it was a question of life and death. They were fighting against time. The more time they would use, the smaller would be their young patient's chances of survival.

When the patient was taken to the operating room, everything was ready. The two surgeons were waiting, and so were the nurses and the anesthetist. The doctors started to examine the patient carefully. Suddenly, the headsurgeon blanched and stepped back saying "Oh, no, I cannot do it, this patient is my son."

Now, the question is: How can this be? The father of the young driver had died in the accident. Many of us would probably consider adoption, change of sex or even a case of illegitimate child as possible solutions to the problem. Somehow, the most obvious solution is the last one to come up in one's mind. The writers of this paper did not think of this solution even after more than ten minutes of vigorous brainstorming! The head surgeon was the young driver's mother, of course.

The story may be known to some readers but it is a perfect example of the structures of our thought. We expect a surgeon to be a man. The fact that a great many of the doctors in Finnish hospitals are nowadays women is not changing this expectation. In fact, we are not dealing with the actual percentages of women and men among the doctors. Our shared expectations of gender based on a person's profession become evident in our solutions to the question that was presented to us. These shared expectations are culturally defined and we are all affected by them. Many of these expectations are embedded in the language we speak and in our thoughts at a level so deep that we tend to think they are "natural" by origin. Like in our example: To exclude the possibility of a surgeon being a woman is not a conscious choice. We just do not think about the possibility of it at first. What if the mother had been one of the nurses? It might have been easier to come up with the right solution to the problem. How many of us think of a man first while thinking of a surgeon?

It seems plansible to think that surgeon, just like, for example, manager, officer or headmaster, is a gender spesific occupation. Not only the tradition in professions that have mainly been occupied by men but also the structured cultural expectations make it difficult for women to climb the hierarchical organization ladder, even though a growing number of women are now members of many of these traditionally "male" professions.

WHY ARE WOMEN NOT GETTING TO THE TOP?

In this paper we examine the symbolic and cultural structures of meaning and expectations in search of answers to the question "Why are women not getting to the top ?" We use women managers as an example to consider the possible answers to this question. In the hundred biggest Finnish firms, only 1-6 per cent of the top managerial positions were occupied by women in mid-1980s (Hänninen-Salmelin, 1985; Nordgren, 1985; Vanhala & Nordgren, 1986, cited in Hajba, 1990, p. 5). In the United States, the situation was quite similar to Finland: in the 500 biggest US companies, less than 2 per cent of top managerial positions were occupied by women (Morrison, White & Van Velsor, 1987, cited in Baker 1991, p. 113).

While trying to explain the absence of women in the top managerial positions of hierarchical organizations, we must, however, first ask questions like "What is a woman manager? What is a woman in management and leadership? How do symbolic and cultural meanings and expectations in the fields of gender on the one hand leadership and management on the other affect women in them ?" Asking these questions relates our qualitative study of four top Finnish women managers to the third wave of academic discussion on women managers (Taalas & Virolainen, 1994).

In the late 1960s the first question to be studied was "Can women be managers?". In the mid 1970s the attention turned to comparing leaders of both sexes. The question was: "Do female managers differ from male managers?" And even after these studies had shown that women can be effective managers and were often found to be more effective than their male colleagues, women still find it hard to reach the very top positions of hierarchical organizations. In the late 1980s the discussion on what has been called the "glass ceiling effect", has been trying to answer the question "why women do not get to the top". (Bell & Nkomo, 1992, pp. 236-237.) We aim to consider questions that have not been discussed much in Finnish academic literature, even though they are not completely new in the international discussion.

THE PRODUCTION OF GENDER IN THE FIELD OF MANAGEMENT

The meaning of objects in our everyday life is interpreted through signs and by forming images in this process. Not all of the signs we read are symbolic. Marshall Sahlins and Umberto Eco define symbol as a social and ideological sign (Pekonen, 1991). Looking for the symbolic structures of meanings we search for the culturally shared and symbolically reproduced meanings. The symbolic side of the signs is then understood to be present when the sign comes to represent social values and ideologies.

The field of management and leadership can be interpreted as a social field on its own. Different social fields have their own specific rules for the collection and acceptance of symbolic capital (Bourdieu, 1977). Symbolic capital can be gained through education, academic degrees, expertise in the work and a successful career in the field of management and leadership. The legitimacy of the collected symbolic capital is controlled and displayed, for instance, at meetings, in public speeches and at the international conferences of specific professions. Furthermore, the particular rules of the profession define the exchange rate of different aspects of a person's symbolic capital: How much prestige a manager is able to collect in the social field of management and leadership.

A person can occupy several social fields at the same time. There are also several social fields present simultaneously in an organization. Women managers are expected to gain symbolic capital both in the field of gender and in the field of management and leadership. Both fields of gender, women's and men's, contain different sets of rules about how symbolic capital, prestige and respectability, is gathered in that specific field. The trouble with managing expectations in several fields simultaneously has been well documented in an extensive range of academic studies. They discuss ways in which women managers could perform succesfully in the fields of feminine gender on the one hand and of the historically masculine management and leadership on the other (see, for example, Korabik & Ayman, 1989).

The gender of the manager cannot be understood as a permanent identity or a product of self-expression. Rather, gender is interpreted here as a set of culturally governed ways of how to produce a representation of one's sex and to perform according to the expectations directed at one's sex. Other people read and understand this representation of one's gender in the frames of a specific culture that the readers currently occupy (Butler, 1990, pp. 140 - 147). Specific cultures define structured expectations about gender in each particular social field and in the field of management (Alvesson & Billing, 1992).

Since the field of management has historically been ruled by males, the manager is stereotypically expected to be a man. For example, a woman manager entering a room filled with the firms' guests may be thought to be a secretary if the people present are not familiar with her position in advance. Reactions differ from situation to situation, but people rarely leave gender unreflected.

The way a woman manager performs her gender is controlled, for example, by commenting on the line of clothes she wears or on her assertive actions. However, when a woman manager has become known in the field of management and leadership, acceptance may be expressed by calling a woman colleague or one's female boss "one of the boys". This phrase can also be interpreted in a negative way as referring to the opinion that one is not following expected gender rules and is therefore a "no-woman". For example, the media and other women can use the phrase in a negative sense and tone of voice. In both cases, this common phrase represents and reproduces the gender-specific expectations of "masculinity" in the field of management and leadership.

Women managers' problems are related to time. Women are expected to show and represent symbolically their following of the rules of the field of gender and the field of management at the same time. Traditionally, women are expected to represent gender through taking care of the family instead of being engaged in paid work after an usual eigth-hour day. While a manager is expected to express her commitment to the organization by networking and showing up at meetings even after a normal working day, a woman is expected to express her commitment to family by shopping, cooking and cleaning.

Women's increasing participation on the labour market has been made possible by the services of the welfare state or private firms. Further, technological development has changed the demands of homework. Still, women's presence in organizations has not changed as radically as some studies have expected (Kanter, 1977). The labour market, the division of labour according to gender (Allén, Keinänen, Laaksonen & Ilmakunnas, 1992) still reflects the gender-specific expectations of women's primary involvement in caring and nurturing. Women reach top positions easier in those professional fields where they work as a majority (Hänninen-Salmelin & Vanhala, 1994). In these professions they are not considered to be breaking the rules of the field of gender as easily as in those professions occupied mainly by men, where women appear as rare birds.

CAREERLESS WOMEN WHO DARE

An ideal career is not only a standard against which everyone in the field of management and leadership is being measured but also an active creator of meaning and expectations. It can be argued that a career is one of the most effective ways for managers to demonstrate their managerial capabilities and skills. A succesful career is a sign of one's capabilities and experience to perform as a good manager. A career is a visible evidence of one's past and present performances in working life, it is a reference. A career is an inherent source of meaning, it is a value in itself. Personal competencies such as effectiveness, knowledge, orientation and ambition are usually connected with a career (Haapakorpi, 1994, pp. 29-31; Petäjäniemi, 1994). Career is also pursued. In a study concerning post-graduate career development amongst professionals, 58 per cent of professionals occupying management positions thought that the main reason they had come to their current work was because of the good career possibilities (Haapakorpi, 1994, p. 30).

In the field of leadership and management, one of the most important ways to gather symbolic capital is through building a career. The career is a sign of the manager's cumulative amount of symbolic capital. An ideal career is usually supposed to be a continuum, both hierarchically rising and continuing without a person being away from the workforce, e.g. on maternity leave or out of work (Larsson, 1982, cited in Haapakorpi, 1994). According to Haapakorpi's study, unemployment during the building of a career leads to a hierarchically lower professional status. Unemployment usually meant starting the building of one's career all over again when returning to work (ibid., 106). Being away from everyday working life meant being disconnected from professional and social networks. This in turn meant that the gathering of symbolic capital was not possible during absence from the working place. It can also show that symbolic capital dates if it is not reproduced all the time.

A manager who is not in the workforce to represent her/his personal competence is not capable of holding or creating a legimate status in the social field of management and leadership. She/he is simply not able to gather symbolic capital. It is impossible to represent a managerial role if you are not working as a manager. Maternity leave and the inability of expressing commitment to the organization after a "normal" workday work the same way for women managers. Women managers are, more or less, disconnected from their professional lives while on a maternity leave. The expectation that women should primarily attend to their family after work makes their commitment to the organization seem discontinuous. In this sense women can be seen "careerless" and they also feel that they are not expected to pursue a career.

A continuing career represents one's commitment to the organizational goals and working life. Women are supposed to commit themselves primarily to the reproduction of and care for children and family. To show primary commitment to something else is not a merit to a woman in the field of gender. This commitment to home is expected from women. Any woman who does not represent this commitment in her actions places herself in the marginal position of not being able to gather symbolic capital in the field of gender. Her femininity becomes questionable. In this sense a career is a dismerit to a woman. Women are not only careerless because of the fact that they have the responsibility to take care of the children but they are also careerless in a symbolic sense. It is not possible for a woman to represent commitment to the organization through pursuing a career.

In the field of management and leadership, managers are supposed to attain a career in order to gain and hold symbolic capital. A career can be seen as a visible evidence of someone's legimate status in this social field. In the field of management and leadership women managers face career expectations that they cannot fulfil because of gender expectations.

In our qualitative study of four Finnish top women managers, the different ways of being careerless appeared in the respondents' speech in an extremely strong way. The women managers who took part in our study denied having pursued careers "even though it might look like that". Careerlessness and its consequences create a continuing contradiction in both the working life and symbolic habitus of women managers.

Women symbolize contradiction in the field of management and leadership because of their contradictory habitus. That makes women also seem symbolically "unreliable". It is difficult for others in the field to identify women as managers because of the ever - present contradiction in the structured expectations that women must face. In our study, women managers saw this as a source of a lot of frustration. Women cannot avoid presenting symbolic contradiction in their habitus and this affects the reactions that they elicit in their profession and while aiming to become a manager.

On the other hand, women managers are seen as being contradictory in the field of gender, as well. According to our study, women managers are often seen as women who have deserted their "womanness" in their search for a place among men, managers. This can be seen, for example, in the popular media's keen interest in women managers' homes and wardrobes. In interviews, women managers are often asked about their children and husbands, whether they cook and clean at home, and what kind of clothes they wear. A woman manager who does not have an ordinary family with husband and children, does not have an interest in cooking, or wears a suit with slacks and a tie, can be seen as an evidence that women managers do not want to be women at all. Symbolically, for example, a woman who, to represent her professional status, dresses up as managers usually do, in a dark suit with a tie, would make a mistake. She could be misinterpreted in terms of the symbolic representation of her gender. That would again make her seem symbolically unreliable. She would turn into a symbolic transvestite. She would raise confusion about her gender representation. To reach topposition women managers have to be seen as reliable and therefore it is important that women managers represent the expectations of their gender in their habitus and lives. How flexibly they may do this is a question of personality and negotiation with the rules of the specific culture in changing situations. The need to struggle against expectations appeared in the speech of the women we interviewed as a necessity of "daring".

The structures of symbolic meanings and expectations are present in one's everyday life. They affect one's behaviour, social contacts and choices in life. Feeling that one needs to be daring is a result of crossing the ordinary boundaries of expectations directed at women. In everyday life these expectations are made visible not only verbally but physically as well. Aiming to become a manager is a huge challenge for a woman. But it also means putting oneself on the line, taking the risk of being criticized in the field of gender, just as it was described earlier in this paper. To dare to break the lines of structured expectations in the field of gender means not only taking a risk of being criticized personally but also facing a risk of labelling the whole gender as incapable. "To dare" and to be a woman are strongly connected in our study results.

SYMBOLIC ANOMALIES: WOMAN MANAGER AS A SYMBOL OF CHANGE

In a classic study of the classification systems of the Lele, Mary Douglas (1975) recognized their cult animal, pangolin, to be anomalous. It was anomalous because it crossed the culturally meaningful boundaries of different elements. Women managers crossing the boundaries of the fields of gender and the field of management, too, can be seen as anomalous. Just as Douglas's study taught us, different cultures treat anomalous beings in very different ways. Some cultures respect the anomalous and some cultures dislike them. This applies to the anomalous in the field of management as well. It has been noted that in fast-developing, dynamic fields like electronics women managers reach top positions more easily than in other fields (Kvande, 1986). In our study the women had been elected to their positions while the field of their organization was going through an extensive change. If women symbolize only change in the field of management, it cannot be expected that their number in toppositions will grow very fast. Therefore it is important to consider other aspects of their symbolic position as well.

According to several studies, women managers are human- and task-oriented. These orientations can be explained by the expectations of the field of gender. Women are culturally trained to take care of and pay attention to other people's needs. Task orientation is the legitimate way to express interest in the managerial work when women are expected to be careerless because of the requirements of gender. It does not contradict the expectations of taking care of others and it is therefore considered a positive way of representing gender and management at the same time. Women managers in our study referred to this aspect by saying that managers need the competencies of a housewife.

As stated above, being anomalous in the field of management is not only negative, but it may restrict the possibilities of advancement in static organizations. Task orientation has led to women manager's gaining leadership through specific expertise. Leading as an expert may shut a woman inside a glasselevator, with no future opportunities to have power in the wider organization (Hänninen-Salmelin & Vanhala, 1994). Being shut inside a glasselevator and a narrow expertise may also exlude women's strengths as anomalous and with it their conscious familiarity with several fields and their flexibility in using the knowledge they have gained in them.

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FUTURE READINESS IN VOCATIONAL ADULT EDUCATION AND CURRICULUM DEVELOPMENT

Pirkko Remes

ABSTRACT

The goal of this article is to provide some ideas for future-oriented curriculum work in the sphere of vocational adult education. In the long term, it is important that curriculum plans open to adults 1) training programmes that will help them return to the labour market, 2) opportunities for the unemployed to become employed, 3) the creation of new, permanent jobs, 4) an opportunity for the comprehensive development of skills and for learning new things, and 5) non-formal transnational networks of diverse groups and individuals.

Descriptors: *future-oriented curriculum, adult education, futurology*

FUTURE READINESS AS A SURVIVAL SKILL IN ADULT EDUCATION

Orientation to the future is part of human nature. The ability to imagine and confront unprecedented situations can indeed be considered a criterion of survival. The aim of future-oriented activity is called future readiness (Bjerstedt, 1986). **Future readiness** is defined as a process where individuals, organizations and societies have an ability to anticipate, confront and control changes which occur at different speeds (Remes, 1993). Societal and structural transition periods always incite discussion about future readiness. As the operational environment changes, people ask: How is adult education preparing to function in a world that does not only exist, but that never will exist? How is the future readiness of vocational adult education?

The basic assumption of future readiness is that it is **possible** to influence the future or, at least, some features and characteristics of the environment and one's own organization. However, certain reservations are associated with this possibility, as with the whole concept of achieving the aim of future readiness. The first section will examine the concept of controllability, according to Mannermaa (1993) currently one of the most important topics among future researchers.

New models for future readiness are being considered and planned. The network of decisions extending from the present moment into futures is one of them (Figure 1). It can be assumed that in adult education **decisions** are inspired by conscious or unconscious ideas about the future. Controllability refers to the directability of some system, like adult education, on a global, regional, or local level towards a desired goal. Traditionally, it has been thought that controllability presupposes uniform objectives and a single control center from which development is directed. However, adult education is a very complex system, with its sophisticated **internal and external**

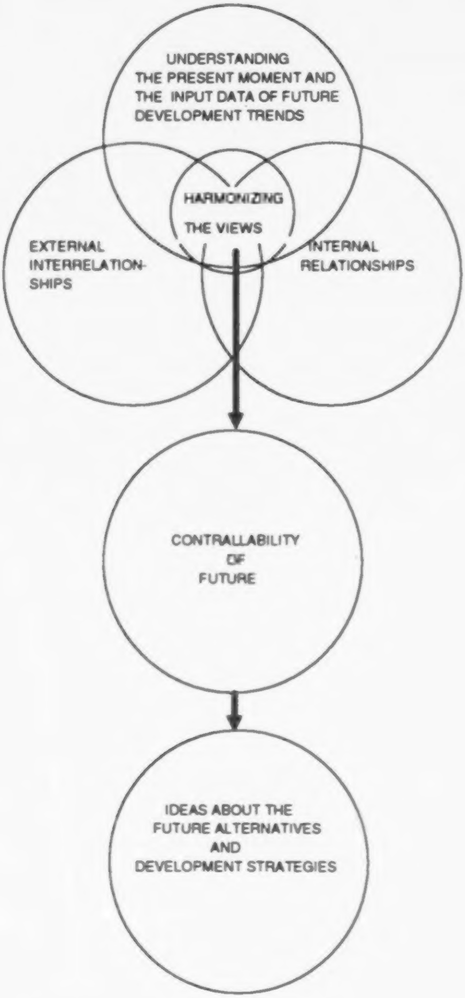
UNDERSTANDING THE PRESENT MOMENT AND THE INPUT DATA OF FUTURE DEVELOPMENT TRENDS
HARMONIZING THE VIEWS
EXTERNAL INTERRELATION-SHIPS
INTERNAL RELATIONSHIPS
CONTRALLABILITY OF FUTURE
IDEAS ABOUT THE FUTURE ALTERNATIVES AND DEVELOPMENT STRATEGIES

Figure 1. *Deduction of the Present Moment into Futures*

interrelationships. Thus the basic problem in decision-making arises from the difficulty of **harmonizing** the views of the different interest groups, as for example in the recent debate about adults' financial study support, where no consensus could be reached about the division of costs between the labour market participants (Aikuisopintotuen selvitysmiehen raportti, 1994, p. 2). Another reservation connected with future readiness concerns the **understanding of the present moment** and the **significance given to different input data of future development trends.** Much statistical input data is available that outlines the future of adult education.

In looking to the future, the various possibilities that lie before us must be considered: the various possible developments that are desirable, and those desirable developments that may also be considered as potentially realizable through the effective application of human resources. Although the future is neither predictable nor predestined, the agents can exercise influence on the many alternatives that emerge as the leading determinants of the development.

In the background of the curriculum there are future-oriented conceptions about future society and culture and future person as an individual and a member of society. It is likely that **information technology** is strongly entering education and making distance learning more and more popular among adults. Virtual reality and computer simulation will become a major element of education and worker training. A global university is emerging in Finland. It will connect students, lecturers, and researchers in many countries via satellite, television, computer networking, and other forms of advanced telecommunications. The global university will lead to significant new forms of collaboration among scholars and scientists.

Information services will allow people not only to commute to work electronically, but to engage in many other social functions via computer, such as electronic shopping, banking, trading securities, voting, getting physical check-ups, and undergoing psychotherapy. Autonomous mobile robots equipped with sensing devices and artificial intelligence could perform a number of duties, relieving human workers of much drudgery.

Ten years from now there will be hard competition for the markets of vocational basic education for adults, directed at Finnish students (Remes, 1993). Learning at work reduces the demand for further training in educational institutions. Teaching methods will also change as individual study programmes are constructed for adult students, taking into consideration competences acquired at work or through other experience or earlier education. There will no longer be as great a demand for student places as earlier, since adult students will prefer participating in competence-based examinations that are open to all.

CONSTRUCTING A FUTURE-ORIENTED CURRICULUM IN VOCATIONAL ADULT EDUCATION

What are the criteria of future readiness in curriculum evaluation? The evaluation of a curriculum normally depends on what is expected of it. In this article the word **curriculum** is used to refer to the goals or development trends set for teaching and learning: what knowledge, skills, attitudes and behaviors the learner is supposed to acquire (Ropo, 1992). The following discussion about the curriculum is mainly based on the ideas of the extensive Swedish research and development work (Bjerstedt, 1979, 1982a, 1982b, 1992), aimed at promoting future readiness in the curriculum. The present author has monitored the curriculum work aimed at future readiness in Finland during a year-long (1989-90) "Adult Education Now!" -campaign. The conceptions of 117 persons responsible for adult education at vocational institutions were studied to find out how they viewed the anticipation of change and the active construction of the future as goals, contents, and practices of adult education (Remes, 1993). It seems that future readiness is becoming a general goal of the curriculum, which should not be included or left out depending on the current social situation.

According to Bjerstedt (1986, pp. 47-50), future readiness in curriculum comprises five parts. They are: **cognitive readiness, attitudes, values, line of action and course of action**. Criteria for **curriculum evaluation** can be formed in these areas (Figure 2). The following discussion will concentrate on the cognitive input data, as well as values and attitudes, in the construction of adult education curriculum.

Future orientation in the curriculum is a set of goals for adult institutions that accept the challenge of helping students to probe their personal and mutual futures. There is a popular myth that looking ahead means predicting what will happen in the future. The truth is quite different. Future orientation is multidisciplinary in nature and thus is congenial to many subjects in the curriculum (Haas et al., 1987).

FACTORS SHAPING THE FUTURE OF ADULT EDUCATION IN FINLAND

Finland of the early 2000s will certainly differ from what it was when the post-war baby boomers entered working life. The profound changes that the period witnessed, during both economic growth and recession, have strongly affected the attitudes and life-styles of the Finnish people. There have been both outward and inward changes, manifestly and latently expressed,

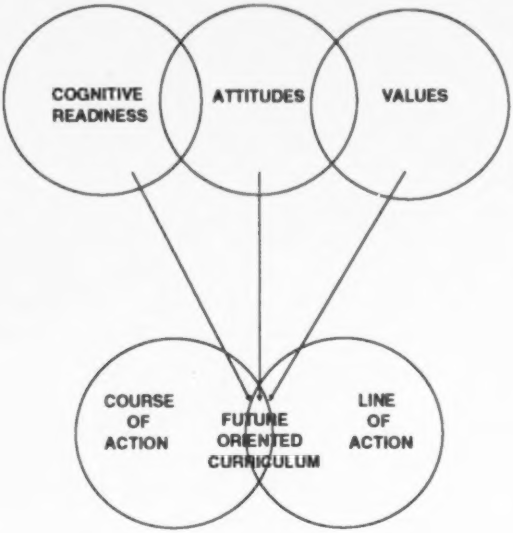

Figure 2. *Criteria for Future-oriented Curriculum Evaluation*

and they have had a powerful effect. We have to try to identify events that might occur in the future.

The dominant message of the growing complexity of societal dilemmas is that old skills will become redundant and new ones need to be learned. The Ministry of Labour (1993; see also Melametsä, 1994) notes environmental factors that influence adult education planning. They are discussed below.

1) Finland has evolved from **a country of full employment to a country of mass unemployment.** Official unemployment rates have risen to 17,5 per cent. In OECD countries unemployment rates are lower, at 12 per cent. One reason for increasing unemployment is the growth of work productivity. Economists frequently refer to jobless growth. Alternative long-term growth curves in European economic development include jobless growth. In spite of the continuing strong expansion of industry, construction activity and delivery, the amount of labour these sectors use is declining both proportionally and absolutely. In Finland the share of wages is today only 14 per cent of the production costs of industry. According to some estimates, the disappearance of industrial jobs will have twice the impact on the service sector.

2) People tend to be caught in a carousel where their lives revolve around alternating periods of temporary employment, unemployment, and training. According to Suikkanen & Viinamäki (1994), a large group of employees in Finland will never have a steady, long-term job. This social change began in the 1980s, and the development is not going to be turned back by a belief that employment will improve when the recession abates. In fact, it is not only a question of an economic downswing. Only about 700 000 people were perma-

nently employed in 1993. On the other hand, 1,0 - 1,3 million people worked in less permanent employment where periods of work alternated with periods of unemployment. There were about 300 000 people seeking employment on the labour market, including students, housewives, and a corresponding number of people withdrawn from the labour market, such as long-term unemployed and people on unemployment pension. In October 1993 only a few men over 45 years old with university degrees were without permanent employment. In contrast, 31 per cent of all men under 30 years old with a corresponding education, and more than half of the women of the same age, had a temporary employment contract.

3) The development trend indicates a transfer from **growing educational resources to declining resources.** During the past three years, allocations for education in the field administered by the Ministry of Education have been reduced by about 2 500 millions FIM (Melametsä, 1994). However, so far the decline in resources has not significantly curtailed the educational supply for adults. The problems caused by lack of resources have made themselves felt in the level of financial aid to adult students. At present, unemployment benefits provide a better subsistence level than study support.

4) A shift has taken place in adult education from controlling the educational institutions, and the actual teaching given there, to measuring learning results by so-called **competence-based examinations.** No longer is attention paid to the way knowledge and skills have been acquired, but instead it is the final result that matters. Vocational certificates, diplomas and language proficiency examinations for adults are examples of this current trend.

5) Significant changes are also taking place in the **appreciation** of education. In the early 1980s it was still quite evident that people who finished their education found employment. Investment in education was seen as profitable. Education was even used as a pawn in the game of labour market politics in the sense that a rise in the educational level of a certain occupational group could be used as a trump card in wage negotiations, especially in the public sector. However, in the present decade education no longer guarantees a job. Only one third of those who finished their studies in Spring 1992 were gainfully employed in October the same year. Today a job is appreciated more than education. Those who are already employed dare not leave their jobs for a longer period in order to participate in a training program, and they do not even consider it an economically rewarding undertaking. Apprenticeship training and other kinds of on-the-job-training are seen as more secure possibilities than public educational arrangements.

6) The greatest change that has influenced education during the past two decades has occurred **in the sphere of social values** (cf. Hirsjärvi, 1987; Hirsjärvi & Remes, 1983). People's views have shifted from an educational policy emphasizing regional and inter-personal equality to a policy that stresses individual values. This change is visible at all educational levels in the form of an increased freedom of choice for students and an increased

freedom of activity for teachers and educational institutions, as well as in the form of strong competition between schools and the increased application of market mechanisms to the acquisition of education.

7) The on-going changes in working life are signs of a social upheaval that education is unable to affect alone. People can no longer rely on the belief that education can, more efficiently than other measures, promote better social equality. This has been clearly shown by recent years' experience, regardless of the objectives of equality in enrolment to education, during educational programmes and in the end results. The present mass unemployment tends to eliminate equality in the distribution of incomes and all living conditions. This has had a greater social impact than any other event since the depression of the 1930s.

NEEDS THAT ADULT EDUCATION SHOULD ATTEMPT TO MEET

The cornerstone of a functional civil society is an active educational policy which guarantees citizens an opportunity to participate in a range of studies and self-development. There are many gaps educational planners are now trying to fill with adult education. One immediate goal of many adult education curricula is to provide training that improves the working ability and work skills of unemployed persons who are willing to participate in training programmes aimed at helping them to **return to the labor market** (Julkunen, 1990). Second, it is necessary to promote the transfer of working people to training, especially when this solution offers **the unemployed opportunities to become employed.** Third, it is important in the long term to promote **the creation of new, permanent jobs.** In a short time-span, the development of a broad base of expertise and skills is the only means of strengthening the foundations of Finland's economy and of supporting the diversification and growth of the production of goods and services. There is an awareness in Finland that the way out of the recession is through new innovations and through investment in people. New jobs must be created in fields and enterprises where new production methods, processes, and techniques are used. This means that working-age people with vocational and professional skills must face growing demands. It is not possible to give up the objective of providing life-long education in curriculum construction, because production is crucially dependent on the vocational proficiency level of each worker. In other words, it is necessary to have not only special expertise but also versatile skills and abilities related to the whole production process.

Fourth, in the long term it is essential from the point of view of social equality that curriculum plans open to adults an **opportunity for the**

comprehensive development of their skills and for learning new things. Finally, the frame of reference in adult education is global. Adult education stresses the value of non-formal transnational **networks** of diverse groups and individuals. The aim of adult education curriculum is to contribute to a free and lively international dialogue among mankind.

Unless the concerns of adult students are taken into account, not even the best curricular goals will be realized. Participation in adult education serves the following functions in each student's life:

- **completing a civic education** that was not completed in childhood or youth;
- **satisfying new educational needs** arising out of the development of working life;
- promoting one's **individual career development;**
- promoting of one's **individual mental growth,** and
- participating in adult education simply as a **way of spending one's leisure time,** in other words, as a consumption commodity.

CONCLUSION

The fundamental goal of this article was to provide some ideas for future-oriented curriculum work. This means that the future of adult education can be discussed, despite its many alternatives and uncertainties. Futures research is inherently risky, due to the high probability of error and the elusiveness of the subject being studied. The ideas presented here do not offer absolute solutions to the problems of future readiness in vocational adult education, but they do suggest tools and directions which warrant consideration, analysis, and review for possible adoption. In the development of the curriculum, the future appears in much the same light as in the rest of society: little can be done to improve the present world, but people have great power over the more distant future. It is believed that the age we live in forces people to develop interdisciplinary thinking and the art of synthesis. More than ever decision-makers must help to educate people who can see the connections between today and the future.

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Part Two

THE STRUCTURAL REFORM OF OCCUPATIONAL EDUCATION AND TRAINING

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THE STRUCTURAL REFORM OF OCCUPATIONAL EDUCATION AND TRAINING

Part Two describes the recent reforms of Finnish occupational education which affected upper secondary education and adult education as well as teacher education. The objective is to promote sustainable development and to keep education internationally competitive through continuous improvement. Such are the policy goals behind the structural transformation of the Finnish educational system.

The experimental reforms in youth training and polytechnic education began in 1991. In a reform of youth education, a strategic starting point is the mutual enrichment between vocational and general upper secondary schools. *Matti Vesa Volanen* discusses the relationship between academic and vocational education in his two articles. He takes a look at the philosophical foundations of education, discussing the adjustment of tradition and utopia in everyday work and the various interrelationships between the school and its immediate environment, going on to examine the new mutual relationships between academic and vocational education based on recent experimental approaches to youth education (upper secondary education).

Beyond upper secondary-level education there are the experimental projects for promoting occupational higher education through the development of polytechnics. The aim of the polytechnics experiment is to improve quality so as to upgrade the educational standards of the occupational tertiary institutions. *Osmo Lampinen* introduces the Finnish polytechnic system. His article describes the options to be made in building a new category of institutions. In Finland, a dual structure of higher education has been selected. This means that polytechnics will differ from universities in respect of degrees, staff structures, administration and financing.

From the point of view of the adult student, flexible vocational education is a precondition of lifelong learning. Recognizing adult students' prior learning closes the inter-generational schooling gap. Flexible vocational education presupposes flexible examinations. *Matti Taalas* discusses in his article the conception of flexibility in the context of certificating occupational skills and the vocational education of adults. The article is grounded on a research project concerning competency-based vocational examinations. *Pentti Hakkarainen* presents the results of an integrated work-based apprenticeship learning programme tried out at a day-care centre. The programme aimed at developing preschool educational work by using research methods. *Matti Ropponen* describes in his article a Finnish project for implementing self-evaluation in adult education with a view to changing the activity patterns of adult education organizations.

The last article of this part, written by *Seppo Helakorpi*, describes the changes in and the current situation of the curricula of vocational teacher education in Finland. Alongside the reforms of youth and adult education began in the 1980s a reform of vocational teacher education. Where previously vocational teachers were trained in a variety of ways in different occupational areas, the last ten years have seen the emergence of an unified and improved programme of vocational teacher education. There have been changes both in the contents and the structure of the training programme. Administrative and legislative improvements have also taken place.

ON THE MISSION OF UPPER SECONDARY EDUCATION

Matti Vesa Volanen

ABSTRACT

The basis for the organization of the daily work of schools is formed by two central distinctions. First of all, it must be decided how to carry out the adjustment of tradition and Utopia in everyday work. The second major decision concerns the nature of the interrelationship between the school and its immediate environment. Is that relationship direct, indirect or built on a conscious breach? Depending on how we solve in practice these two distinctions we have four main ideas of school: general education school, service school, Labour market school and School for the priviledged. The Finnish 1978 Development Act contains a vague and conflicting consensus about the mutual relationship of the general upper secondary school and vocational education - the general education school and the labour market school. A new balance arrangement is now taking shape, modelled on the dichotomy of the service school and the school for the privileged. This dichotomy would be a step backwards. It would lead to a very elitist interpretation of the general education thematics and, on the other hand, to the realization of Enlightenment philosophy through a school form that is antithetical to it. Are there any other alternatives? The service school is a good servant but a poor master. It needs as its starting point a new conception of the mutual relationship between the ideas of vocation on the one hand and general education on the other. Is it possible that the school could rely on a more comprehensive conception of education, where both the goal and the inherent meaningfulness of knowledge, as well as the ability to realize the goals, are appreciated as equally important knowledge/skill? And where the notions of general education and vocation would be the source of support and enrichment to each other?

Descriptors: *general education, vocational education, upper secondary school*

ON WHAT TENSION DOES THE SCHOOL FUNCTION?

The basis for the organization of the daily work of schools is formed by two central distinctions. First of all, it must be decided how to carry out the adjustment of tradition and Utopia in everyday work. The second major decision concerns the nature of the interrelationship between the school and its immediate environment. Is that relationship direct, indirect or built on a conscious breach?

TRADITION AND UTOPIA

Schools often choose to maintain tradition. It is the task of the school to transmit the joys, sorrows and accomplishments of earlier generations to new generations. This commitment to tradition is, however, carried out by the educational institution in a unique way. Tradition - even by definition - necessarily contains the idea of a Utopia, because no tradition can be given an expression without a commitment to some kind of Utopia. By its commitment to tradition the school actualizes a Utopia, or the other way around: by actualizing a Utopia the school transmits a tradition.

A Utopia can be expressed in many different ways. In our educational administrative work we have become used to dry lists of objectives. A more romantic locution gives expression to a Utopia by saying, for example: the school must bring up patriots who have "a bright intelligence, a hot heart and golden hands" (Suhomlinski, 1977, p. 134).

CONTINUITY AND BREACH

Schools dispensing an all-round general education, academic upper secondary schools in particular, have seen anything savouring of productive activity and the working life as distant from themselves. The rhythm of production and the noise of the markets should not come too close to the school's workday. It would endanger the educational endeavour. Therefore, a wall that is thick enough must be built between the school and the world's market place.

This breach characterizes the educational institution in a decisive way. It is inevitable, because the other social institutions, such as the labour market, production units, market places, homes and the mass media are too deeply involved with everyday life and its tradition. It is not possible, however, to master this everyday life, except by means of cross-illumination. And that is exactly what tradition and Utopia are doing. They make it possible to adopt the laying bare of compulsory daily routines as one way of functioning and living, although not the only one.

Overcoming the divergence between tradition and Utopia presupposes a breach between the school and the temporal and local near environment. It may be that by means of the "tradition and Utopia" theme it is not possible to solve the question of continuity and breach in more than one way, because reconciling the divergence of tradition and Utopia presupposes solving the problem of continuity and breach in favour of the breach. We can approach tradition and Utopia in at least two ways, from the starting points of enlightenment on the one hand and that of general education (*Bildung* in German) on the other. The concept of enlightenment takes up the metaphor of a machine, an encyclopedic relationship to knowledge and a scientistic relation to the world. It emphasizes the dissemination and utilization of knowledge. Utopia thus involves scientific control of the world, and tradition means the tradition of accumulating information, scientistic knowledge. In the background haunts the ghost of the Renaissance, the humanistic hybris which sees man as a secularized god.

The concept of general education (Bildung) adopted, especially on German ground, another basic metaphor which involves the notion of organism and organic development. In contrast to the philosophy of the Enlightenment, where an enlightened person enlightens an unenlightened one, general education holds that it is possible for an unenlightened person to enlighten himself. In this case the question of Utopia becomes a question of, for example, how each individual is able to transcend his or her given historical conditions and grow into a distinct individualized person. This can only take place through a certain denial of tradition, in other words, through criticism. (Heydorn, 1980; Klafki, 1985.)

A turn of the axis thus takes place in the thematics of general education. The reconciliation of tradition and Utopia becomes a problem where one has to relate the ideas of "evolving oneself out of oneself", or the idea of becoming educated, and the process of learning to control the world.

THE IDEAL OF GENERAL EDUCATION AND THE IDEAL OF VOCATION

Two different ideas have been hidden in the notion of general education (*Bildung*): the idea of an estrangement from the world and the idea of creating oneself. It is possible to see the true world by drawing away from the immediate surrounding world, by conquering the world mentally through the shaping of one's own internal world. That which is "stable" in the world is therefore hidden, concealed somewhere, as an internalized world that only a person who constructs his own internal world by himself can open for himself. Education means giving birth to selfhood, to what I believe in, what I hope for. The command of the external world and its tools easily remain strange and distant (Heidegger, 1987).

The notion of vocation starts from a calling; someone calls me personally to fulfill a duty (God, conscience, the state...). The tools of controlling the external world are placed into the center of activity. The questions of selfhood and the philosophy of life remain as private concerns. The true world and I remain strangers to each other.

The notions of general education (*Bildung*) and vocation lend each other external support. They help to strengthen the separateness of each other and they even divide people into two half-educated groups: one group concentrates on analysing the meaningfulness of goals and intentions while the other concentrates on skills and knowledge related to the realization of given objectives. This division partly covers the social task of the "general educational" schooling, or as it has been aptly said: "General academic education is vocational training for those who will be leaders, and vocational training is general all-round education for those who will be led." (Schweitzer, 1989).

THE SCHOOL NOW - WHAT KIND?

In Finland the 1970s debate on educational policy was, as far as post-compulsory education is concerned, crystallized in the 1978 Development Act. It brought the ideas of general education (Bildung) and vocation to a tottering political balance by legalizing the segregated school system as the upper secondary level educational system. It seems that this balance is now breaking down. In current discussions about educational policy there are at least four conceptions of the school which anticipate this breakdown.

General education school. Education is a citizenship right guaranteed to individuals by the state. Its goal is to elevate the educational standard of the nation and its citizens and thus to secure the success of the nation in the field of international cooperation. All the educational reserves of the population should be usefully employed by the nation.

In its relationship to the immediate environment the school is not syncronous. It fetches its materials from afar, from history or Utopia. The school makes it possible to achieve critical consciousness by cross-illuminating the current social environment. The school trusts in the power of the word. The school creates tools for assessment and preservation, but not for solving the basic problems of this age.

The school positions the internal development of the world and the mastery of the external world as structural opposites. It splits men and women in two and into two groups. In the end, the school can basically only provide an ambiguous half-education: on the one hand, the skill to control the external world by carrying out given goals, on the other hand, the ability to analyse goals, intentions, meaningfulness, without any understanding of what it means, for example, to realize them productively.

Service school. Education can be seen as customer service, where the customer considers what is good and what is bad education. A student has a kind of voucher at his disposal, given by the state, which he can use in the way he finds best. The demand shown by the students directs the development of education. It is thus the educational market that directs education, rather than the labour market. Schools compete with each other and their success depends on the kind of students they are able to recruit. The school relies simply on the students' own experiences and on the formation of an experienced educational need. The school answers only for what the student buys. Schools become accountable units which have their own production and marketing strategy. For the educand, schooling is exposed as a shopping market where one can pick different packets into one's own educational pushcart. Educational equality will be taxed.

School for the privileged. Schooling means the exploitation of the natural resources of individuals. The educational system should select people according to their talents for different types of education. National success depends on the achievements of gifted students. The school accepts tradition in such a form as it appears to the present age, and it is the task of the school to maintain the social division of labour contained in that tradition.

Labour market school. Education can be seen as the regulated production of labour force in conformity with social needs interpreted by the state in the light of the demands of the labour market. On the basis of anticipated technological development the school aims at the renewal of the skills structure of the labour force. Everybody learns everything, if time and resources are available. The school relies on a technological Utopia with the basic idea that the tools for controlling the external world also create the essence of life.

The fact that the academic upper secondary school and vocational education are disconnected at the upper secondary level theoretically helps to maintain all these four school forms: it divides people into semieducated groups, in ideological discussion it relies on the idea of elite schools, and it forces vocational education to remain within the confines of the labour force training model. And what is most alarming, it guides the developmental philosophy of the educational system as a whole in the direction of the service school. This trend is already emerging in adult education.

The tension between the notions of general education and vocation is resolved in two different ways: either in the organization of a service school based on the educational market or in the strengthening of the elite school. This development means that vocational education is increasingly confined under the direction of the labour market, while the academic upper secondary school is developed as the basic school for managerial positions in the European Community.

The school for the privileged helps to maintain and strengthen the dichotomous semieducation and divides young people into different castes as regards their educational opportunities. The service school, at its worst, produces a third category of semieducation, where people lose their hold on both contents, goals, intentions, and on the tools of achieving the given goals, in other words, on the command of both the external and the internal world.

The 1978 Development Act contains a vague and conflicting consensus on the mutual relationship of the upper secondary school and vocational education - the general education school and the labour market school. It is a balance that was based on the aftermath of the upheaval in educational policy caused by the post-war baby boomers. It is also a balance whose "social demand" is over. A new balance arrangement is now taking shape, modelled on the dichotomy of the service school and the school for the privileged. This antithesis would be a step backwards. It would lead to a very elitist interpretation of the general education thematics and, on the other hand, to the realization of Enlightenment philosophy through a school form that is antithetical to it.

Are there any other alternatives? The service school is a good servant but a poor master. It needs as its starting point a new conception of the mutual relationship between the vocation idea and the general education idea. Is it possible that the school could rely on a more comprehensive conception of education, where both the goal and the inherent meaningfulness of knowledge, as well as the ability to realize the goals, are appreciated as equally important knowledge/skill? And where the general education and vocation ideas would be the source of support and enrichment to each other?

OPEN EDUCATION, BILDUNG

Education is easily understood as something that is remote from and peripheral to work. The need of activity created by education often finds expression in play, in other words, in the form of sports, art interests, the performance of a scientific experiment, etc.

Is it possible to organize work - and not just educational work - according to the principles of education, rather than the other way around, where educational work is organized according to the principles of productive activity? It would mean, for example, that we could work as citizens and human beings in our jobs, too. We would be forced to assess our work and to relate it to our conceptions of citizenship and humanity, and vice versa.

Would not, in that case, the present era and its core problems emerge as the horizon of education? Educative would thus be everything that is common to all, that which promotes comprehensive growth and that which highlights things that concern all people. Education would thus consist of the cultivation of intelligence, hands and the heart. General all-round education would help to define our relationship to ourselves, to each other, to the natural environment and to development - in other words, it would include self-definition, co-definition and the definition of joint responsibility. Vocational education, on the other hand, would be organized through our special expertise as world models, activity models and work methods.

Vocational general education refers to our ability to read and interpret those aspects of life that we cannot see with the naked eye, nor through a microscope nor by a telescope; our ability to interpret relationships that are only manifested through language and with its help. Vocational general education also refers to our ability to relate our vocational expertise to our activity as citizens and people and to the expertise of others.

This way the idea of general education and the idea of vocation are not in opposition but instead support each other. On the one hand, they open up a possibility for work that is educative and, on the other, they make educational work urgent.

The school has long ago lost its monopoly as information provider and producer of learning experiences. An instructive/enlightening approach is therefore no longer sufficient. What is more important is the organization, interpretation and mastery of knowledge and experiences. Learning involves investigating and evaluating the conditions of growth and education as well as going into the world. The design of learning and teaching can no longer resemble a larva, which spins the world out of itself or a seed, which matures into a big tree, supported by the nourishment of the earth and water.

If the curriculum plan is not a machine that can be started by the Ministry of Education, nor a seed that is thrown into a soft school soil to grow, what could it be? Could it be like the language that we use, which is not only living its historical developmental phase, but also a life that is searching, associating, experimenting, differentiating and uniting, more pulsating and more accurate in its perception of relationships than a larva or a seed? Thus the curriculum plan is the school's workshop on the world, on the basic problems of our world - in other words, education.

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MUTUAL ENRICHMENT BETWEEN GENERAL AND VOCATIONAL TRAINING IN YOUTH EDUCATION

Matti Vesa Volanen

ABSTRACT

In many European countries efforts have been made to find new mutual relationships between academic and vocational education by means of separate experiments or by extensive experimental programmes. There have been three main approaches: 1. **Modularization.** *This approach is based on the idea of modules, where learning material and learning events can be isolated into clearly distinct units. 2.* **Integration.** *Another major approach involves the integration of vocational and general education. It is possible to realize this integration in many different ways, but the basic idea has often been to discover common subject matter areas for the curriculum by using cross-tabulation of different vocational fields and academic disciplines. For example, in order to find teaching material for the main work tasks of a hairdresser, all disciplines can be scanned through (chemistry, physics, biology, psychology, economy...). By means of the cross-tabulation of vocational and scientific fields it is also possible to create a new systematics, where the disciplinary classification traditionally dominates and the vocational one has been adapted to it. As an educational policy, integration is often characterized as "raising the standard of vocational education", and making it "more scientific". In this case vocational education is regarded as somehow less developed than the academic approach. 3.* **Mutual enrichment**. *The idea of mutual enrichment springs from the incorporation of two long educational traditions - vocational and academic. These educational traditions, which are based on conceptions of vocation and intelligentsia, cannot be forcibly differentiated nor can they be integrated by domination, through the assimilation of one by the other. Instead, what is at issue here is a fundamental change in the basic nature of knowledge and skills demanded by work and citizenship today. In Finland there is an experimental reform of youth education going on, in which the strategic starting point is mutual enrichment.*

Descriptors: *vocational and general education, mutual enrichment, integration, upper secondary school*

UPPER SECONDARY EDUCATION IN FINLAND - RECENT DEVELOPMENTS

The earlier Finnish reform of upper secondary level education, which was to be put into effect in 1988, was the result of many mutually conflicting compromises. One major compromise was that the idea of the 1973 Educational Committee regarding the integration of learning elements from vocational and general education in different educational sectors was not realized. The ensuing model consisted of vocational education structured according to basic lines and of a separate channel for the academic upper secondary education. It was believed that the latter would become constricted to correspond to the starting places available in higher education. As we know, this did not happen. Instead, the relative proportion of general upper secondary school starters in the whole age cohort has continuously increased. This rapidly created the well-known oversupply of general upper secondary school graduates, which has been addressed in a variety of ways.

Under the present conditions of the educational structure, the choice of the upper secondary school guarantees the widest range of opportunities in subsequent choice situations.Thinking in terms of open options is, of course, sensible from the students' perspective, although it is not rational from the viewpoint of the functioning of the educational system.

Thus the above-mentioned reform of upper secondary education did not succeed in dissolving the contrast between academic and vocational education. On the contrary, a double bond was created between them: the one supported the other, from the outside, in order to survive. As the age groups grew smaller, the general upper secondary school had to strengthen its position to prevent the decline of student numbers. In emphasizing the vocational channel which was opened to further studies, the vocational institutions had to provide, on the one hand, opportunities for general education studies and, on the other hand, a possibility of receiving a "more practical" education, one closer to "working life". This institutional separation has been so strong in many areas that the teachers of educational institutions situated on opposite sides of a street have not even met each other, although they may have been employed in the education of young people for more than 20 years. The first important achievement of the educational experiments at the upper secondary level has, therefore, consisted of crossing this border - as headmaster put it: "We have already started cooperation. I've just had a five-minute telephone conversation with the headmaster of the neighbouring school - the first one during my ten-year career in education."

In many European countries there have been efforts to find new mutual relationships between academic and vocational education by means of separate experiments or by extensive experimental programmes. There have been three main approaches:

1. **Modularization**[1]. This approach is based on the idea of modules, where learning material and learning events can be isolated into clearly separate units. In this case the question of vocational and general education does not create an actual problem. In the provision of education there must be included different modules from which the student can, more or less freely, construct his or her own educational program. The criterion of choice is the student's own interest, which hopefully results in a programme of studies that is satisfactory from the student's point of view. The boundaries between the modules tend, however, to become opaque surfaces, the modules are a sort of "information packages", and thus the organization of larger entities through the content of education is inhibited.

Modularization of education has probably been carried furthest in Scotland. In the upper secondary vocational education there are about 3200 separate modules, which all have their precisely defined achievement objectives and which can be completed regardless of the way one has acquired one's knowledge. If we add up all the school subjects taught at the Finnish upper secondary school, we also get a rather big number.

Education which is based on the modular structure often includes the idea that education has the form of a programme, in other words, that it can be constructed in many different ways, within the constraint of certain rules. To what extent this programme becomes a study programme planned by the student himself varies in different countries.

2. **Integration.** Another major approach involves the integration of vocational and academic education. It is possible to realize this integration in many different ways, but the basic idea has often been to discover common subject matter areas for the curriculum by using cross-tabulation of different vocational fields and academic disciplines. For example, in order to find teaching material for the main work tasks of a hairdresser, all disciplines can be scanned through (chemistry, physics, biology, psychology, economy...). By means of the cross-tabulation of vocational and scientific fields it is also possible to create a new systematics, where the disciplinary classification traditionally dominates and the vocational one has been adapted to it. As an educational policy, integration is often characterized as "raising the standard of vocational education", and making it "more scientific". In this case vocational education is regarded as somehow less developed than the academic approach.

Often the idea of integration also involves the ideal of an organic entity. Teaching materials permeate each other, the teaching contents form a "totality", where nothing can be separated from the whole without destroying the whole. The boundaries between study units remain vague, and they are considered only formal and are even seen as an obstacle to studying.

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[1] "Module" originally meant a small measure of land or grain. The strength and weakness of the module-concept lies in its tendency to form strong boundaries in the process of organizing the study material, and even so that each module is dependent on other modules only externally. In contrast, "a study entity" tells right away on what basis the units are combined: the manner of combination and the way the entities are formed must promote learning.

Another thought often connected to the idea of integration concerns educational lines. In other words, the study material has been formed in advance - on scientific grounds - into an organic entity, which must be studied in a certain order, and where no essential elements can be left out. Thus the student can make an independent choice, but only from educational lines that have been constructed in advance, and little opportunity is left for choosing the learning contents itself or how to approach them.

3. **Mutual enrichment**. The idea of mutual enrichment springs from the incorporation of two long educational traditions - vocational and academic. These educational traditions, which are based on conceptions of vocation and intelligentsia, cannot be forcibly differentiated nor can they be integrated by domination, through the assimilation of one by the other. Instead, what is at issue here is a fundamental change in the basic nature of knowledge and skills demanded by work and citizenship today. Both knowledge and skills, that is, education in general, must be more and more open in the sense that people should be able to organize and control open situations through them.

An important criterion in the development of education at the upper secondary level has involved the question of the form of the studies, whether it should be based on study lines or study programmes. In an organization based on study lines the curriculum has in advance been divided into lines, so that the student has only limited possibilities to change his study programme after the choice of the study line has been made. The approach based on study programmes, on the other hand, emphasizes the student's personal opportunity and duty to construct his or her own study programme within the framework of available options. The share of permanent teaching contents, compulsory to all, can vary from 1/3 to 2/3. This way the degrees/examinations linked that conclude the various study programmes become so-called framework degrees, which can be "filled up" in many different ways.

If we combine two of the above described classifications, we get the following table: (see Table 1)

Table 1. *Some Major Alternatives in the Organization of Upper Secondary Level Education*

	Vocational/Academic	
Alternatives	Differentiated	Undifferentiated
Study-line-based	**A** Academic upper secondary schools vs. vocational institutions	**B** Integration
Program-based	**C** Modular structure	**D** Mutual Enrichment

By means of this dichotomy we can present the four basic alternatives for education at the upper secondary level. Practical examples and experimental programmes can be found for each one. The most advanced modular system is being developed in Scotland, while the integration model has been under construction in many different experimental programmes in Germany.

In Finland the basic arrangement of the upper secondary level educational experiments points to a transition from point A to point D. Considerable pressure conflicts are associated with this transition. On the one hand, thoughts are focused on the production of the courses or modules reguired in education based on study programmes, so that it would be possible to construct an individual study programme across the boundaries between educational institutions and teaching subjects. On the other hand, the reformers want to preserve for the students the possibility of being able to understand reality through the perception of larger entities[2].

The Finnish Ministry of Education initiated a policy debate on upper secondary education, which culminated in a seminar on educational policy held in the Finlandia House in February 1989. The memorandum which had been drafted for the seminar formulated the idea of a new type of school for youth education and for vocational higher education and of experimental programmes to try them out. This memorandum contains the proposal that post-compulsory education should be remodelled into a united school for all youth, where students would have very great opportunities to construct their own study programmes. It also included the objective that studies at the upper secondary level should give students a general eligibility for further studies and a basic vocational competence. It was proposed that the study programs should be grouped into six different areas: 1) mathematics, science and engineering, 2) humanities and behavioural sciences, 3) commerce and administration, 4) health care, services and social sciences, 5) biological sciences, agriculture and forestry, and 6) arts and cultural fields. What is important here is the fact that the classification is based on disciplines and not on vocational fields. The various vocations would probably have been classified within these discipline groups at a later stage of developing the plan.

There were three basic thoughts in the above vision of the Ministry of Education: the idea of an integrated secondary education school, general eligibility for further studies and increased alternatives. All these ideas met rather strong resistance[3].

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[2] Actually, this question crystallizes the difficulty of fitting together two different educational traditions. As we know, the impacts on education of both the German-speaking countries and the Anglo-American tradition are clearly visible in Finland. The question is, is it possible to find fruitful ways of bringing these two traditions into mutual interaction? The integration of Europe is unavoidably leading us in this direction. Philosophically, this problem could be summarized in the message conveyed by the concepts of "Liberal education" and "Bildung": "Liberal education" implies that the *truth is found in liberty*, whereas "Bildung" believes that *liberty is found in the truth*.

[3] Soon after the seminar the minister and later on the Cabinet changed.

One essential phase in the construction of the proposed educational experiments consisted in defining the legislative foundations of the experiments and the associated examinations. The legislators finally decided to continue the current separate school systems. The experimental units, however, form executive groups which have decision-making powers over different educational institutions.

On the other hand, the eligibility for further studies was restricted in a decisive way. The question of whether the new combination studies would constitute a recognized examination or not became a central problem. In this question the text of the law and its commentary section waver and make different interpretations possible. The position of the combination examinations therefore remained somewhat unclear. They have been regarded either as an individual study programme model for the specially gifted or as an alternative for the tenth grade of the comprehensive school. They can also be seen as an educational alternative, parallel to the upper secondary school matriculation examination, because it gives an eligibility for further studies, but not a vocational certificate.

As far as the curriculum is concerned, the decision has three essential features:

- the number of compulsory subjects will be limited to four and alternative options will be substantially increased both at the upper secondary school and in vocational studies,
- other than compulsory general education subjects have been grouped into three groups (humanities and social sciences, mathematics and natural sciences, and practical and art subjects), among which one must choose at least four courses/three study units,
- teaching is non-graded[4] and course-based.

A comparison with the original vision of the Ministry of Education reveals that the original principles of the upper secondary level experiments changed considerably when practical implementation began. General eligibility for further studies was abandoned. The principle of teaching all upper secondary level students in the same school form was also abandoned, but the possibilities for mutual decision-making between schools were increased.

On the other hand, it seems evident that efforts have been made to find a balance somewhere between the pure module model and the model based on study lines. The trend is towards a shift to thinking based on study programmes, but the authorities want to impose more or less tight frameworks on study programmes. The purpose of these frameworks is either to try to ensure that study programmes will be sufficiently versatile or to guarantee that adequate entities of knowledge and/or skills form the basis of the studies. In this latter respect the experiments differ from each other.

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[4] As later developments have shown, the realization of the ungraded school has been rather problematic because of the decisions that have cut down the resources.

GOALS AND TOOLS

Planning Strategy

According to the planning strategy chosen by the Ministry of Education, the planning should be carried out in a decentralized way and as an open process. This led to the mobilization of strong municipal centers. The planning process was at first very much steered by city authorities. The cities were primarily interested in institutions of vocational higher education (polytechnics), but the educational experiments at the upper secondary level were generally regarded as a necessary prerequisite for the realization of vocational higher education.

Regional differences in the upper secondary level experiments can be found in four different sectors: in the scope of experimental projects, in the amount of earlier cooperation, in the degree openness of the projects and in the attitudes to curriculum development.

The scope of the experiments varies considerably. There are some very large projects which include several schools and there are also smaller projects including only a few schools. This, of course, has an essential effect on the organization of each experiment. In Lahti, for example, schools have been grouped into clusters in order to promote cooperation.

Differences are also found in the amount of earlier experience: the Kotka project can rely on a long, multistage vocational upper secondary school pilot project, while many other school districts are just taking their first steps towards starting constructive cooperation between the different types of educational institutions.

There are also differences in the degree of openness, as far as the students are concerned: sometimes the options have been limited to a few pre-constructed entities. In other places the programme has been built on a so-called open schedule, starting from the premise that all education available in the region should be at the students' disposal when they construct their own study programmes.

Further differences between the experiments are seen in the way they have taken up curricular questions in the discussions: the usual starting point has been the adaption of present curriculum plans to the new situation. On the other hand, people have seen that new forms of teaching must be developed in the experiments, forms that require crossing the boundaries between educational institutions and curriculum subjects. This has led to the production of study projects, such as Lake Vanaja project in Hämeenlinna, an entrepreneurship project in Joensuu, and an Europe project in Kemi.

Goals

It is a general cause of concern when school reforms are being planned that the innovations tend to remain on paper only, as sort of planning poetry, which is not transferred into classrooms and to the everyday life of the schools. In order to prevent this familiar situation three different aspects have been emphasized in the developmental projects of upper secondary school education: goals, tools and monitoring the results.

The goals of the experimental reform projects in upper secondary education have proved to be complex, demanding and challenging. All the major goals of upper secondary level education can be characterized by saying that the aim is to increase the openness of the educational system so that students have an opportunity to create their own individual study plans. This idea is based on two starting points: the structures of the educational system should be so open that students' choices make possible new choices later on. On the other hand, students must be able to correct wrong choices without too great personal sacrifices. It is believed that when students are able to plan their studies on their own, it helps to make them more independent and more conscious of their responsibility for steering their own life.

From the viewpoint of working life the division into academic and vocational education is also very problematic and even harmful. This type of division tends to create regrettable barriers between skill and knowledge, theory and practice, academic and productive fields. Formerly the separation of the academic upper secondary school and vocational schools served the division of labour: the general upper secondary school was a vocational school for those who had already been selected for management tasks after completing the compulsory comprehensive school, while vocational education provided an all-round education for those who, after the comprehensive school, took up tasks at shop-floor level. This sort of division has already broken down.

Tools

Three different tools are being created for the experimental projects in upper secondary education. First, there are the experimental units which have been formed on a regional basis. Within the framework of these units people can make decisions which help to coordinate and harmonize all the developmental projects of upper secondary level education in the area. This is of prime importance. Already some teachers, who have been working across the same street for decades, have awakened to the realization that sensible work is being done in the neighbouring educational institution, too, and that they are largely facing the same challenges in their work. The cultural barrier has begun to come down.

Second, the experimental units must create a new management technique, which produces a more open schedule for the students. All education available in the region is included in the total provision of education. The aim is to offer students the opportunity to include the widest possible range of subjects in their own schedules. Consequently, the teachers must carry out a lot of discussions regarding the way different courses can substitute and formally correspond to each other.

The third tool is related to the development of new teaching and learning patterns. Special attention has been paid to projects consisting of comprehensive thematic entities, in which participate teachers and students of many different subjects and from a broad range of educational institutions. This work is only just beginning.

THE OPENNESS AND INDIVIDUALIZATION OF EDUCATION

Such ideas as choice, freedom of choice and individual study plans are often flaunted when motivation is sought for the Finnish educational experiments. However, in the course of the discussions two very different interpretations of these issues have been brought up.

According to the first interpretation young students, who have already become individualized, should be allowed to freely construct their study programmes without being restricted in this right by the choices of others. This reasoning is both psychological and social. It assumes that both the biological and social heritage of young students has at the end of compulsory education already shaped them into individuals, which fact must be accepted by others - both the other students and the educational system. Special abilities are the main criteria for the construction of study programmes. Thus the process of individualization is seen as a sort of zero-sum game, where my individualization is an obstacle to other persons and their individualization is an obstacle to the development of my own individuality.

According to the second interpretation, the main idea of the whole experiment is that the opportunities given to the students to choose, and also to take responsibility for the construction and progress of their own study programmes, are an excellent pedagogical way of promoting the students' growth into independence and the development of the skills reguired for the mastery of one's own life - in other words, individualization. The reasoning is thus primarily developmental-psychological and pedagogical, but also social. Accordingly, individualization takes place with the help of other people; they are the sources of my individualization, not its obstacles. This hypothesis is ultimately based on the argument that the free development of young students into individualized people that is, their increased self-reliance is a precondition of the situation where all have this opportunity. In other words, education at the upper secondary level must be constructed so that it guarantees individualization for everybody. According to this interpretation, neglecting to develop these facilities for action in young people will have to be paid for later on as a deficiency in the functions required for further studies, working life and citizenship.

This conception also leads to the following conclusion: if individualization takes place in interaction with other people, it is in everyone's interest that everybody has to deal with as many different kinds of people as possible. This helps to enrich my individualization as well as that of the others. It is also a condition for - if we may put it this way - the creation of a fully empowered member of society. Thus educational equality - which means that full citizenship and full-scale education is guaranteed for all - is a precondition of individualization. To be even more precise, we might argue that the realization of educational equality is the necessary prerequisite of students' individualization.

THE HIDDEN CURRICULUM

The Hidden Curriculum for Work

Assembling the skills and knowledge reguired in production and injecting them into the productive process has traditionally taken place through the division of labour. The division of labour has made it easier to assign individuals to superindividual units and utilize them. This bundling of individuals took place under the pressure of circumstances in the first industrial revolution: people had no source of livelihood but their labour, and it could only be used in manufacturing processes organized as a single unit. There was nothing else to sell.

A production unit was achieved by an increasingly thoroughgoing division of labour, in which the labour was grouped according to productive functions. This function-based assemblage of labour became the opposite of work management and the organization of work as well as R&D; mental work as the antithesis of physical labour.

This dichotomy came to a head in Taylorian "scientific work management". Subsequently the various functions of the production process have been reorganized from many different viewpoints; the best-known of which are probably the various programmes and mental models of the "Fordian worker" and the "humanization of work". The introduction of new technology sparked off widespread research into pressures for changes in the qualification structure; these studies produced highly contradictory hypotheses: dequalification, requalification, underqualification, overqualification and polarization hypotheses, depending on the companies' fields of production and what production strategies they used.

The research programme originally started out from a fairly narrow analysis of the man-machine relationship, interpreting qualification requirements precisely in terms of the technical requirements set by the new machine/tool. Qualifications were widely understood as a structure of labour's skills corresponding to technical requirements. As the 1980s progressed, the interpretation became broader-based and a reinterpretation has emerged which takes into account a concept that had been forgotten for some time - that of the vocation.

The notion of vocation - as compared to the narrow concept of qualification - is associated closely with the employee's identification, self-understanding and interpretation of his/her position and tasks on the job. The debate on qualifications left this open or assumes implicitly an identification with the production unit or company in question, within the framework of which qualifications may be used "freely". In such a case, vocational self-consciousness is a disturbance of rather than a benefit for the flexible control of production.

The way in which qualifications are viewed is thus a mental model for building up flexible production. This underlines the fact that flexibility is the precondition of an energetic involvement in the productive process itself. As new technology comes in, the requirement for flexibility becomes highlighted as the need to acquire a theoretical control of one's work: the rapid and precise absorption of operational decisions and processes related to one's work and tools in the form of conceptual modelling.

The building up of flexible production can also start from the opposite hypothesis: that what is central is not a command of the theoretical side of work but of its tangible side. As a result, the production process is seen from another angle: the conceptual agency of the work ("theory") is required to transcend the limitations of the individual level, since the production process has been given such a tangible (enriched and diversified) form that it can no longer be defined according to its own internal terms. The subject of the work can no longer be defined in terms of the internal attributes of the production process. In other words, job motivation transcends the limits of the job. Here the question of language and the "text" required for the work, the mass of text, is of key importance.

The change in the working process is revealed in three different features. Firstly, machines have learned to use language, and those who use the machine must learn that language. The language has been built into an increasingly dominant part of everyone's work. An employee is no longer in manual contact with the tool; he or she converses with it.

Secondly, those who have used language as a tool have been obliged to learn how to use machines. We use pen and paper as the basis for our linguistic expression more and more infrequently. Increasingly, the basis is a computer, on which our use of language rests.

Thirdly, language has become a means of production just like machinery. The consciousness industry accounts for a growing part of production.

In flexible production, the employee must learn three languages: firstly, the language used by the machine to analyse and manipulate the subject of the work; secondly, the language which controls and directs the machine's operation; thirdly, the employee must be able to go beyond his/her own, specific vocational knowledge in order to interpret it from the viewpoint of the entire production unit.

The employee must have a vocational general education to relate his/her specific task to the totality. The skill of contextual thinking, a new social literacy, is an essential prerequisite for flexible production.

This skill of contextual thinking will require the support of a new attitude to information and to the use of information at the workplace. Information technology makes it possible for all the necessary information to be available to everyone at all times, immediately readable from computer terminals, for example. With the work process becoming increasingly focused on concentrating knowledge and skills into a product, the availability and readability of relevant information will be the key to flexibility.

Realizing the flexibility strategy will require the development of tools for the control of the work process. It is no longer sufficient for the job to educate the worker by tactile, aural or olfactory clues as to how the process progresses. Although these forms of control over the work process may be based on a highly sophisticated and detailed command of the work process obtained through experience, it is frequently almost impossible to give reasons for such control in words or in concepts: "It's always done this way and it always turns out well". This is not to say that this work would not be "theoretical", but merely that the theoretical basis for the work is unstated.

When the worker and the work are separated by a tool which, in order to work, conceptual descriptions and expressions which are not immediately perceptible, the work becomes something that must be taught: signals from the tool can no longer be interpreted with skills acquired through practical experience, they must be given linguistic expression. They can then be written down and taught outside experience; they condense knowledge faster than work training.

The work process in which the acquisition and analysis of the subject of the work is emphatically crafts manlike may be described as motivating. In such a case, the work process is not linked with the skills associated with the tool so much as with the personal acquisition of the subject of the work.

A work process which generates meanings takes form in precisely the transcending of work which motivates and teaches. In such cases, it is possible to proportion the skills associated with one's tool/method in terms of their relation to the specification of the subject of the work, which is not subordinate to this tool but creates the interpretative background for its use (see Table 2).

Table 2. *The Characterization of the Work Process from the Viewpoint of Its Educability*

	Subject of work	
Tool	Direct	Directed
Direct	Training job	Motivating work
Directed	Teaching job	Developing work

Could the characteristics of the work process described above be applied in the search for answers to the question of how professional skills can be learned? The fourfold classification we have defined provides one possibility for analysis: It can firstly be learned by training (i.e. through long experience) without producing descriptive systems in linguistic form of how the work process takes place. What is essential in the learning process is to catch the "feel" transmitted by the tool, which is thus strictly limited in terms of what raw materials or results are good or bad. This learning model is based on the transmission of tradition and experience and it is very slow to adopt new things.

Professional skills can also be learned through teaching the work, i.e. by studying, in which case the relationship with the work is taught by means of a linguistically expressed conceptual system. It is as if the instruction gives ready-made spectacles through which to see and interpret one's own vocational behaviour. In other words, rules and compliance with them are taught. The results of this learning process can only be altered by changing the conceptual spectacles in question. This mental approach easily produces an externalized, technical relationship with the work. The dynamics emanating from the subject of the work remains unattained.

A third model for learning an occupation is based on the creation of a direct relationship with the subject of the work; i.e., an experiential/emotional relationship with which to assess the opportunities provided by the tools for one's work to open up the essential features of the subject of the work. This kind job motivation generated by the subject of the work resembles the traditional artisan like mental model transferred to the learning situation.

Work that generates meaningfulness in the form of a curriculum does not seek motivation for learning from a predetermined sphere of the subject of the work; rather, it seeks it from the definition of the mutual relationships between one's own and others' work and from the adoption of social literacy.

In my opinion, the best description of the above changeover has come from Kazuo Koike (1988, 1989). His thesis is simple: professional skills are the ability to improve productivity, or, in other words, the horizon that creates meaning for the professional skills of a worker in a production unit is productivity and the ability of each worker to relate his/her specific skills and capability to this horizon, otherwise it has no significance to the production unit. Professional skills are bound to the working community's success and survival, which means that they are at once very tangible but also common. The tasks set for them are immediately and invariably visible in every task, but the challenges are very open too: they can only be perceived with a sufficiently open conceptual equipment. In this case, the work process must be developed in the limited sense of the word: one needs constantly to relate one's own specific knowledge to the production unit's functional totality. The dynamics of development would be formed from precisely the effort to develop production literacy and the skill of economic contextualism in one's own work behaviour. The behaviour thereupon takes on such concrete forms that the eyes, ears and hands are no longer enough, and the spectacles that language creates must be developed.

Naturally, it is a separate question as to how concretely we define productivity. To what extent will environmental and socio-economic indexes be bound up with this? This remains to be seen.

The Hidden Curriculum for Education

Kiiskinen and Lehtivaara (1988) studied various Finnish vocational schools and their teaching . By slightly reinterpreting their findings we can see three conceptions of work which are included in curricula:

1) **Taylorian work** - the teaching is traditionally school-type, with "the teacher having much to teach, demonstrate and advise, work to plan, organization and supervision"... "Students have little independence and freedom to plan and decide on their own work, their learning tasks". ..."The results of this type of activity are replicative, repetitive abilities which can be used when confronted with an situation identical to the one in which the learning took place" (Ekola, 1991, p. 92).

2) **Fordian industrial work** - the teaching is based on the teacher's role as a work supervisor. S/he also organizes jobs, although "the role also involves, to a limited extent, teaching functions as well as functions which stimulate teaching". The teacher "distributed tasks, supervised and guided work. The students had a more responsible and independent role, for example in the use of study materials and in their interpretation." "This kind of 'hired worker' teaching tactic resulted in the learning of basic skills which can be used in different variations within the field of skills in question" (Ekola, 1991, p. 93).

3) **Productivity-responsible work** - the teacher is the student's personal advisor and guide. His or her teaching emphasizes autonomy, the ability to set targets for learning, to select one's practical tasks and to make decisions about how to implement one's choices. Learning materials are used appropriately as source materials. "The aim is to acquire basic capabilities in the vocation, taking into account the various subfields of individuality"...."As an objective of the activity, the broad-based foundations of vocational skills arise, expressed... in the form of a conceptual mastery of the activity, of skills in application, problem-solving and planning which transcend individual jobs and situations. Furthermore, a completion of the personality takes place, since the emotional field of the personality becomes linked to the occupation during the practical training period" (Ekola, 1991, p. 94).

Ekola and Rantanen (1988), found closely corresponding teacher types in their own research. They describe teachers as "school-type" (26 per cent of teachers), "master teachers" (30 per cent of teachers) and "learning-centred teachers" (43 per cent of teachers).

At their best, curricula for work appear to emphasize development-centredness and open vocational education which is committed to social relationships (productivity). Some vocational education and some teachers appear to have adopted the same starting point. Thus, the question of the mutual relationship between what is vocational and what is general educational becomes paramount from the viewpoint of both vocational identity and occupational identification.

THE IMPLEMENTATION OF THE EXPERIMENT

In developing new models for youth education there seem to be two opposite tendencies that clearly indicate the different views in solving the problems of implementation:

The first choice is to decide whether we develop education from the viewpoint of the working scheduling technique or of that of the curriculum. The former will lead to emphasizing the practical arrangements of education - putting the time, the place and the teachers and students with their respective needs and goals together. The curricular point of view emphasizes the integrative, content-based discussions about developing study forms and methods. The question of putting or getting together the time, the place, the content, and the teachers and students will primarily be seen as a pedagogical issue. The most important issue is to develop, together with the students, environments that foster educational goals.

Another central issue can be illustrated by another opposing pair: diploma-centredness and student-centredness. The diploma-centred view emphasizes the idea that the real issue in implementing the experiment is to match the existing diplomas and degrees, in other words, to make them compatible so that students can study for two different diplomas at the same time. The student-centred approach underlines the student's choices. Planning an individual study programme and being responsible for one's own studies is seen as a major pedagogical means of promoting independence.

Both of these views are, of course, only the opposite ends of a continuum with many variations between the ends. However, with these opposite ends, we can construct four ideal types (see Figure 1):

Students with double qualifications, vocational undergraduates (or academically oriented vocational school students) with two diplomas/qualifications, are students who, in addition to the Matriculation Examination, take one of the existing vocational diplomas. That does not leave them much freedom in their choices because they have to fulfil the existing diploma requirements. The existing requirements determine their development as well. Pedagogical development is limited to current basic solutions.

Masters of choice are students whose studies are mainly based on their own choices. Vocational orientation is at first quite unspecified becoming gradually more precise during the studies. On the other hand, however, the modules to choose are specified in terms of time, place, and content. Freedom of choice means freedom to choose between different study modules or units or "blocks". The pedagogical challenge lies with the interchangeability and compensation of studies.

Polytechnicians, vocationally oriented undergraduates, are students who want to integrate both vocational and all-round education into one diploma or degree. The freedom of choice is minimal/very limited. This model calls for thorough curricular development in order to integrate studies, secondary school mathematics with the technical applications of technical studies, for instance.

Masters of action are students who have had an opportunity to work in a fairly open learning environment where they have been able to control the time, the place and the contents of their studies themselves. The contents are brought out of the environment by using different working methods created within different subjects or disciplines. Craftsmanship is regarded as a means of solving central modern problems rather than as a ready-made slot or position in working life. The teacher is the planner and evaluator of learning environments and processes.

The experimental units started the implementation by addressing the problems of working schedules. The aim was to open the doors of the schools so that the students can construct their study programmes from all the educational supply of the schools of the experimental unit. The only limits are the regulations of the curriculum of their own examination(s).

The main idea of this first step of the experiment is that the students as "Masters of choice" have better learning motivation and more responsibility for their studies. The intention is also that the open working schedule of the net of schools will push the teachers and students to ask what is the best way to organize the activities of learning, rather than the acts of teaching.

The progress in the opening of the doors of the schools has been promising. The other opening - to construct more open and situated learning processes, i. e. to see students as Masters of action - is possible only if the first opening is successful. Some experimental units have had a few study projects in which teachers and students from differents schools have planned together quite open learning processes, but these are still exeptions to the everyday practice.

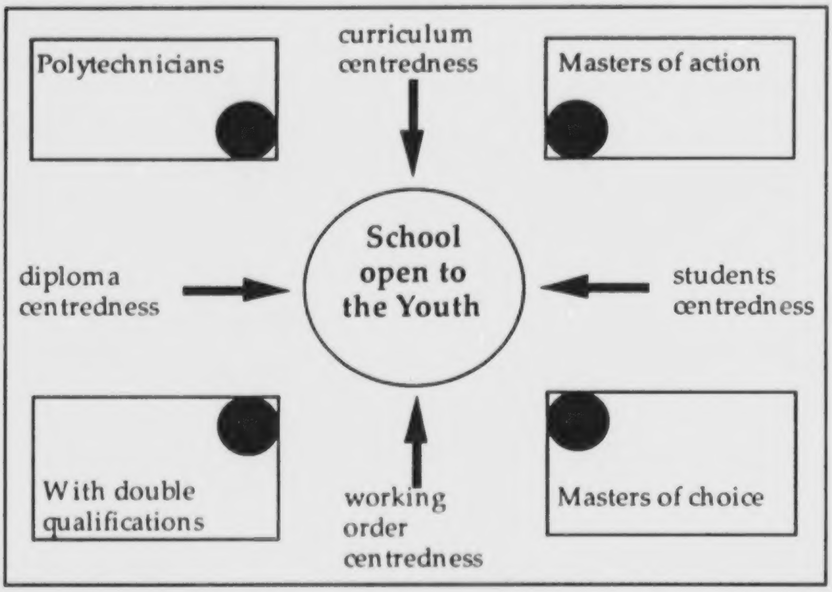
Polytechnicians
curriculum centredness
Masters of action
diploma centredness
School open to the Youth
students centredness
With double qualifications
working order centredness
Masters of choice

Figure 1. *Ideal Models for Developing the Upper Secondary Youth Education*

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THE FINNISH POLYTECHNIC MODELL

Osmo Lampinen

ABSTRACT

The article introduces the Finnish Polytechnic system. Polytechnics have been developed in Finland by an experimental method. There are 85 colleges chosen to run pilot schemes, forming 22 new polytechnic units in all. The aim of the experiment is to raise educational quality in order to help polytechnics reach higher educational standards. The article describes the choices to be made in building a new category of institutions. In Finland a dual structure of higher education has been selected. This means that polytechnics will differ from universities in respect of degrees, staff structure, administration, ownership and financing. The principal aim of structural policy is to stimulate co-operation between universities and polytechnics and at the same time to prevent academic drift.

Descriptors: *polytechnics, academic drift, experiment, dual system*

POINTS OF DEPARTURE

Finland is currently carrying out an experiment in practically-oriented higher education. It is dispensed at institutions of the German *Fachhochschule* type, called *ammattikorkeakoulu* in Finnish. Its abbreviated form AMK will be used in this article.

The AMK reform means a thoroughgoing change in the Finnish model of higher education. Traditionally, only universities have counted as higher education establishments, whereas other higher education has been included in secondary education. Up to now, this setting has been quite stable in Finland. The only significant change in the concept of higher education was introduced in the amendments to the Higher Education Development Act in 1987, when it was expanded to include art academies.

Before the AMK reform, vocational colleges were classified as institutions of secondary education, in which the administrative arrangements differed from those of universities. It was considered that secondary vocational institutions could not be granted the same autonomy in questions relating to their development as universities. In this respect they were strictly subordinated to a national agency. Not all institutions were happy with this situation, and from time to time it has been suggested that university-level engineering institutions should be established. These suggestions have never received wider support.

The expansion of higher education in Finland has not been effected through the establishment of new universities, but through the enlargement of university-sector institutions. In addition to increased intakes, universities have been assigned new fields. The most significant reform was the incorporation of teacher education and kindergarten teacher education into the faculties of education.

Alternatives to AMK Institutions

Throughout the post-war period, there have been strong pressures for expanding the higher education system. Up to the 1980s this pressure could be alleviated to some extent through increases in the university sector. This policy had run its course in the late 1980s, because in the long term a continuous growth of university education would not have been in the interests of either students or society. There were three alternative solutions to choose from: to reintroduce lower university degrees, to authorise secondary establishments to award university-level degrees, or to establish a non-university sector.

The creation of lower (BA) degrees would have required a separate organisation and thus a reform of university administration. If this model had been chosen, Finnish higher education would have resembled the Swedish comprehensive university system and the German *Gesamthochschule* system.

The comprehensive model did not appear attractive in the 1980s, because it would have left little room for the development of higher professional education. If vocational college education had been transferred to universities to any larger extent, it would have been subordinated both organisationally and ideologically to traditional academic education. This solution would have given more responsibilities and influence to universities but hardly resolved the problem of developing upper secondary education.

The other alternative was to retain the prevailing university and vocational college structures, but to authorise some colleges to award university-level degrees. This model would have diversified the higher education system but hardly given enough impetus for its development. The right to award degrees could easily have become a mere formality, given to some colleges or institute types without any strong developmental obligation. Since the authorization would probably have been granted to individual institutions, this solution would have precluded the possibility inherent in the AMK system of building extensive networks between institutions.

In Finland it was seen that the most efficient way to expand higher education was to establish more vocationally- and practically- oriented institutions alongside universities. In this model, the non-university sector is built on existing vocational colleges. The aim is not to construct totally new institutions like the French IUTs, but to base them on vocational colleges and their amalgamation. This being the case, it is essential to create a developmental strategy for raising the standard of colleges.

THE AMK DEVELOPMENTAL STRATEGY

Vocational colleges have not traditionally been considered academic institutions in Finland. Broadly speaking, they represent another tradition of higher education. They are more firmly anchored in practice and in high-standard professional skills than universities. In pedagogics, they have applied a greater variety of teaching methods than universities.

AMK institutions have been created on an experimental basis. The relevant act provides a flexible framework for AMK institutions to develop different aspects of their activities. The experiment has been supported by staff-development training and special developmental measures. So far, the experience gained from the experiment has been positive. For instance, the OECD examiners currently reviewing Finnish higher education policy concluded that the bottom-up planning system has yielded excellent results.

In relation to colleges, the key question has to do with the coverage of the AMK system. The basic question is whether to transfer all vocational college education to the non-university sector or to retain some colleges when the AMK institutions are established on a permanent basis. A corollary of this is the question in what form the AMK institutions should be established and what colleges should remain outside the system.

Alternative Models of Higher Education

The fundamental questions have to do with the relationship between AMK institutions and academic establishments. This dimension will also largely determine how the creation of AMK institutions will affect the future structure and content of vocational college education. If the AMK institutions are given a strong academic bias, the system probably cannot be very extensive or need not take much account of the old college structure. If the AMK institutions are given a strong vocational bias, thus deviating greatly from universities, it is important to ask if there is any role left for the old college level.

European higher education models can be roughly divided into six types on the basis of the underlying organisational structure and the interrelationship between higher education institutions:

① University systems, in which higher education is organised into one uniform track and which does not include a non-university sector. This is the prevalent model, for example, in Austria and Italy, as well as in Finland.

② Binary systems, in which higher education is composed of distinct but formally uniform institutions. This system has been implemented in Great Britain and Ireland, for example.

③ Higher education systems based on simple level and type differences, in which universities and other higher education establishments are clearly different. This system can be found, for example in Belgium and Spain.

④ Systems based on complicated level and type differences. The most typical representative of this is France.

⑤ Dual systems based on two different types of higher education establishments. The clearest applications of this are found in Germany and the Netherlands.

⑥ Integrated higher education models, in which different types of higher education are provided within the same organisation. The Swedish comprehensive university model and the German *Gesamthohschule* represent this type.

In the dualistic model, the line of demarcation lies between the binary and dual systems. In the binary model, AMK degrees parallel university degrees. The best-known application of this model is the continuum of Anglo-Saxon bachelor's, master's and doctoral degrees, which is applied in all institution types. Another alternative is a bifocal degree system in which AMK and university degrees are not parallel. The most typical examples of this are the German *Fachhochschule Diplom* and the Dutch HBO degree.

Dualistic Higher Education System

When the Bill on experimental AMK institutions was being drafted in Finland, both the binary and the dual systems had their supporters. The stances were not, however, very clear, and for instance a report published by the Parliamentary Education Committee in 1991 can be read as advocating both the binary and the dual model. In subsequent debates, the dual model has clearly won over the binary one. This can be seen, for example, in the 1994 Decree concerning University Degrees, in which AMK degrees are explicitly defined as distinct from university degrees.

The dual model would be a natural choice if the emphasis is on the distinctive role of AMK institutions as compared to universities. If, on the other hand, AMK education is considered lower university education or education preparing for universities, the binary model would be a well-founded choice.

It would have been contrary to Finnish tradition to include university degrees in vocational education. This tradition represents a view that education of vocational expert differs from university education not only in level but also in nature. AMK institutions train practically-oriented professionals who have strong links with working life. Their instruction is built on problem-oriented entities taken from the world of work. University education in turn is more scientific by nature and its degree programmes are based on disciplines born within sciences and their branches.

Practical orientation can be understood in many ways. From the perspective of the AMK institutions, the most appropriate definition has been given by Vice-Chancellor Rolf Dahlheimer (1989) of the Hamburg *Fachhochschule*. Based on an encyclopedia from 1840, he defines practice as all goal-oriented activity. Random and subliminal activity does not, however, merit this term, and hence all practice is related to some more or less advanced theory, or an awareness of the purposes of the activity and the means for their achievement. Practice not connected with any theory often becomes mere groping, according to Dahlheimer.

Mastering advanced practice entails that AMK education is largely theoretical and that AMK institutions also undertake research in support of practice. The idea that the only function of AMK institutions would be to apply knowledge produced at universities is not in keeping with the current concept of expert work, which requires a mastery of theories and an ability to find new action models. If the AMK institutions were to undertake no research, a large part of their instruction would rest on an inadequate knowledge base.

It is, however, difficult to specify the division of work between universities and AMK institutions, because a substantial part of university programmes, such as medicine, involves learning practical skills. Conversely, AMK institutions, too, do scientific work and acquire new information through research. Roughly speaking, the focal points of university and AMK education are clearly different. The priorities of university research arise from the internal development of academic science and scholarship, whereas AMK research is, rather, investigative R&D, which seeks to find more advanced tools for professional competence.

There will probably always be some vacillation between institution types. AMK institutions will assume university features, and *vice versa*. On the other hand, the lines of demarcation may fluctuate greatly on different educational levels. In terms of educational policy, it is expedient to aim at as simple and transparent structures as possible which facilitate administration and streamline the regulation of student flows. A very heterogenous organisation would not serve students, the educational administration or the world of work.

The idea of the dual model is to build the higher education system on two different traditions. In Finland, the tradition of vocational college education is fairly young. The first industrial schools were established in 1885, considerably later than elsewhere in Europe. Up to the 1970s, vocational colleges evolved largely on a sectoral basis to take care of education and training in different fields. College education has always been rather schoollike, anchored in the practices of working life. University tradition is significantly older in Finland. Influenced by the Humboldtian model, it has rested on a close link between teaching and scientific and scholarly research. Especially in the humanities and the social sciences, university studies have involved extensive academic freedom.

In terms of both working life and students, it would not be expedient to incorporate vocational college education randomly into the university system. A hasty fusion might lead to the loss of the best college traditions, such as practical orientation, contacts with working life, solid pedagogical expertise and concern for students. It is true that one way to develop the college system is to incorporate in it the best elements of academic education, such as the need for verification, the principle of scientific argumentation and plenty of freedom of choice. This does not, however, entail adopting all university features.

From the perspective of working life, it is necessary that the higher education system produces professionals with different specialities. The strength of the university system is in its solid theoretical expertise and mastery of scientific methods. The AMK institutions in turn can produce professionals with practically-oriented expertise. The AMK institutions can also develop a stronger regional orientation than universities. This differentiation benefits students, because it offers more options for students with different preferences than a unified university system.

Academic Drift

There is always a risk that AMK institutions begin to resemble universities. This phenomenon, which is generally called academic drift, means the common tendency of institutions lower in the academic hierarchy to imitate those above them. An especially frequent object of emulation is the university system, which radiates its influence on hierarchically lower institutions.

The best-known example of academic drift is the development of British polytechnics. This institution was created through a strong higher education policy programme in 1968. According to Anthony Crosland (Pratt & Burgess, 1974), who drafted this programme, polytechnics were to be clearly distinct from academic universities. The mission of British polytechnics was to provide shorter-term education with strong practical orientation, and they had to be more clearly controlled by authorities than the universities.

Two decades later, Great Britain finds itself in a situation in which the polytechnic system, both as an organisation and as a form of education, is being merged into the university system. In their study on the birth of the polytechnic system, John Pratt and Tyrrell Burgess (1974) claim that the British education policy did not have a clear idea of polytechnic development after all. Decision-makers could neither set strategic goals for the policy nor define the means for implementing them. This resulted in a growing academic drift and in the failure of the whole polytechnic policy.

This example shows how important it is, if we want an effective policy, to define clear objectives and action strategies for AMK development and to provide the operative means for implementing these objectives.

Structures of the Dual Model

The primary function of AMK policy is to define the administrative, organisational and regulatory means needed to strike a balance between the differentiation and similarity of the two higher education sectors. The means should be conducive to preserving the special characteristics of each form of education without hindering the fruitful transfer of influences between the systems.

In Finland, the structural differences between the university system and AMK institutions are the following:

- different degree system
- different staff structure
- different administration
- different ownership base
- different financing.

These factors reflect a long tradition in the Finnish educational system and have been recorded in the AMK legislation.

The differences in the degree, staff and administrative structures reflect the different missions of the universities and AMK institutions. Universities are research institutions which award postgraduate degrees. AMK institutions in turn are primarily educational establishments in which research supports teaching. Thus, it is not expedient to establish pure research posts at AMK institutions nor to tie qualification requirements to scientific output to the same extent as at universities.

Administratively, AMK institutions are built on former vocational colleges. The main model is an amalgamation of several institutes. One special feature in AMK administration is the stress placed on owner representation as opposed to internal administrative autonomy, that is, external parties have larger representation on administrative organs than at universities, in which all the members of administrative bodies are generally appointed from within the institution. Apart from owner representation, AMK bodies, such as the council and the executive board, can include representatives of business and industry and the scientific community. Rectors of AMK institutions are more like managers than at universities, and can be chosen from outside the institution.

In Finland, universities are run by the state. Vocational colleges can be municipal, inter-municipal, private or state institutions. The aim in recent years has been to transfer state institutions to local authorities. This means that the state is withdrawing from the vocational sector altogether. Thus the ownership base of universities and AMK institutions will remain different.

The differences in the ownership base also mean different financing systems. Universities are financed directly from the state budget. The AMK resources in turn come from the state and the local authorities. Since it is virtually impossible to change the distribution of financial responsibilities between the state and the local authorities, it is likely that AMK institutions will be financed by municipalities in the foreseeable future. This system under which the students' place of domicile contribute to the financing is not particularly well suited for higher education establishments, and it is likely that efforts will be made to change it in the longer run.

The basis of state financing is in principle similar for universities and AMK institutions. Resource allocation is based on the number of students and the degrees awarded on the one hand, and on institutional performance on the other.

The Finnish higher education system currently taking form resembles the German and Dutch systems in structure. The common denominator is above all the dual degree system. There are naturally also essential differences. The ownership base is more differentiated in Finland than in Germany or the Netherlands, because the system of local ownership or local financing is not known there. The Finnish staff structure resembles that of the Dutch HBOs, but deviates from the German *Fachhochschulen*, which use the same staff titles as universities.

There are differing opinions on many features of the dual model. According to John Pratt, polytechnic institutions should be authorised to award postgraduate degrees (Pratt & Burgess, 1974). In the longer run, this might be desirable, but in the present situation in Finland the introduction of the doctorate degree at AMK institutions could easily make them more university-like. This in turn would immediately raise the question of professorships and research posts at AMK institutions.

AMK teachers in Finland hold university degrees, but they get their pedagogical training at special AMK units and Vocational Teacher Training Colleges. The group monitoring the AMK experiment has suggested that the training of AMK teachers should be transferred to universities. The British experience clearly shows that this would preclude the possibility of training teachers oriented towards AMK pedagogics.

In Finland, the differentiated, dualistic organisational structure should be constructed so that it does not prevent the mobility of students and ideas between the systems. In Finland mobility is easier than for instance in Germany, because the same initial education is required for AMK institutions and universities. In both establishment types, the requirement is either general or vocational upper secondary education. Student mobility can be secured if the institutions agree on mutual recognition of studies in different educational fields.

Finnish AMK institutions should adopt the same steering and regulation culture as universities. This would make certain steering tools, such as management by objectives, budgeting by results, performance incentives, performance evaluation methods etc. applicable to both AMK institutions and universities. The flow of influences from one system to another should not be blocked. AMK institutions can also be a source of innovations, as the Dutch example shows.

Finland cannot build the higher education system purely on its own. It must take account of various EC Directives on education, which define the duration of education, teachers' qualifications, students' initial education and the duration of professional training. Directive 98/48/EEA concerning education and training of at least three years' duration clearly defines the level and extent of the degrees required for the practice of a profession.

The main question regarding the permanent establishment of AMK institutions is whether to favour one-disciplinary or multidisciplinary units. In Finland, one-discipline colleges have mainly been created in response to the needs of business and industry. Educationally rich units require large multidisciplinary AMK institutions. In terms of educational policy, it would be wise to use of the occasion presented by the permanent establishment of AMK institutions to exclude the one-discipline AMK model from their development.

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FLEXIBILITY IN VOCATIONAL ADULT EDUCATION

Matti Taalas

ABSTRACT

The article discusses the conception of flexibility in the context of certificating occupational skills and the vocational education especially for adults. Vocational examination is discussed as a tool for educational flexibility along with some logical conclusions and practical solutions of contemporary Finnish legislation. The article is based on the research project of competence-based vocational examinations (Aikuisten ammatilliset näyttötutkinnot) by the National Board of Education, and on the workshop on the same topic held in Jyväskylä in 1993.

Descriptors: *vocational education, assessment, examinations, vocational qualifications.*

VOCATIONAL FLEXIBILITY - A TRULY FLEXIBLE CONCEPT

'Flexibility' is demanded almost always when working life discusses future demands. More careful listening to that discussion reveals changes in worker qualifications, in production, as well as future turbulence. Flexibility is loaded with labour market connotations on the one side and with future technological changes on the other (Nätti, 1993). A wider scope is needed to look at the problems caused by flexibility in vocational education. I have described views on vocational skills or occupational ability with a schema in Figure 1 (Taalas, 1993a, Taalas, 1993b).

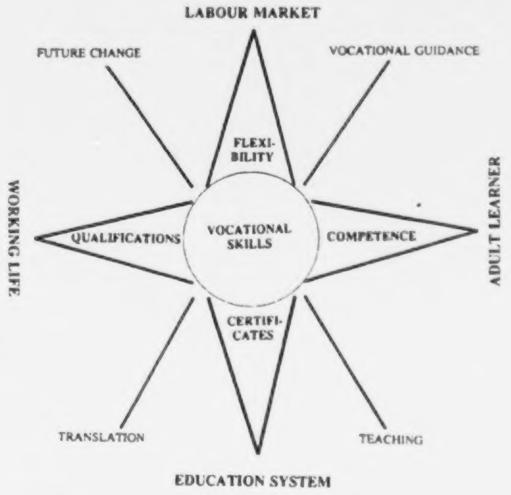

Figure 1. *A Schema of Vocational Skills or Occupational Ability*

In the compass-figure there are four directions to view as to a vocational skill. The labour market's standpoint is labelled with word flexibility. Labour market is demanding skills to be flexible enough for as many occupational tasks as possible. In practice broad and common skills contraindicate a narrow speciality, and theoretical knowledge does not always create readiness to produce. The same problem of usefulness of general/specific multiplies and turns upside down when we think about future readiness in working life. General and theoretical knowledge lasts longer and is more transferable.

Planners of vocational education have to decide whom they are going to listen to when they have to choose the goals and contents for education. It is of importance what kind of interpretations we accept for future scenarios, and how the variety of views is extracted to a structure of the goals of vocational skills and their assessment, and how curricula are formed as paths of proceeding steps. (Haavio & al., 1993)

Future readiness in work and production and the flexibility of society (Rinne & Kivinen, 1993) make the questions of flexibility relevant to the standpoint, not only of working life, but students and colleges as well. Each of them will choose the solutions which are thought to be most relevant to their own future scenarios and at the same time to their predictions and interpretations of future demands of society. The changes in the values and attitudes of students towards work and studying and their opinion of 'good life' have to match with what courses the colleges offer and are able to arrange.

Pitkänen (1994) has gathered a vast variety of future visions for the Finnish education to five main thoughts as follow: The speed of change will be fast. Life in society will become more complicated. Uncertainty of life will increase. The amount of information will increase. There will be more international relations. Kuusi (1994) in his summary crystallizes four more concrete content demands of the Finnish future. Society will be and will demand more learning. The environmental crisis will sharpen in developing countries. Virtual realities will challenge the 'real and true' realities. There will be discrepancies in the values of long span and short span acts in gaining profits in the work concerning nature or other people. Even this short analysis connects flexibility with values. In the future the scope is not so much on the value setting but more on the possibilities of vocational education to solve this puzzle. More emphasis is put on the means we have for these tasks, especially, how assessing and certificating of adults' vocational skills can be taken to the service of flexibility.

'AN ADULT' - A SPECIAL CASE

The compass-figure standpoint of a student at vocational skills and their acquisition will vary depending on whether she/he is a teenager or an adult. In Finland the attention of vocational education has been concentrating on youth. The educational system is a compact entity with the compulsory school including vocational guidance, quantitative estimations of study places, legislation and public financing. Colleges are mainly run by society, and every teenager is estimated to have potential and financial possibilities to vocational further education if she/he wants to. The tradition, statements and good reasons emphasize theoretical vocational knowledge, academic and social skills in the vocational college's curriculum. The future qualification demands are supposed to be not only of a citizen and a skilled worker in working life and labour market but also of a person who is able to proceed in the occupational/professional career.

In life-long education an adult is in a different situation than a teenager who has to learn all the survival skills of social and working life for the first time. Depending on the life phase the main task for her/him may be re-orienting after a great change in the occupation/production. Then one's past may be as well a burden as an experience in understanding the ongoing process. When a youngster needs a compact package of 'everything the school can offer' an adult is seeking for possibilities to individual choices and combinations, and how much she/he needs possibilities to adapt the learning phases easily to her/his life and career. An adult is more selective and aware of the responsibility of the choices in building her/his vocational competence, or at least should be.

If an adult wants to return to college or study e.g. for a course financing can be complicated depending on the person's economic situation, the willingness of the employer to pay for the studies or with future salaries, and the state/community support. The final decision reflects how important the counterparts see the qualification the course is supposed to give.

The discourse between employers, employees, and colleges on qualifications in working life would be better if it happened so that they all were speaking concretely and using almost the same words with common meanings. The form of vocational education to concretize the qualifications is to express them with the terms of vocational examinations.

The flexibility of vocational education from an adult's point of view can be concretized according the compass-figure with three main points. How is guidance arranged i.e. is the information about the new qualifications available and clearly expressed and is it possible to gain it easily, and can it point something new for building one's own career? The second question, is the competence expressed by exams adequate for one's life situation and goals, is the structure of competence and studies motivating or not to begin to study, e.g. how easily can previous learning be benefitted from? And the last point is how the learning/teaching is organized. Is it done 'in an adult manner', which means individualization, experimental and social learning situations, multi media, and teacher's non-biased attitudes?

During the present economical depression in Finland many unemployed have returned to vocational colleges as full time students (having the same financial support as the teenagers), but colleges have very little flexibility to their special needs or demands. Adult students have to adapt to formal youth education.

THE NEW FINNISH LEGISLATURE FOR VOCATIONAL EDUCATION AND CERTIFICATION

Three big steps have been taken in adult vocational education towards flexible labour policy during the nineties. The first one restated the vocational adult education colleges (centres) very independent, and locally responsible (Laki 760/90), the second one stated the financial support of vocational adult education for labour policy reasons (Laki 763/90), and the third step was taken in 1994 with the law on assessing and certifying vocational competence (LAC) (Laki 306/94).

The first two laws stated the playground of organizing and financing the education in co-operation with local labour force authorities with state money and local employers. They made it possible to fulfill the local needs, to make decision making faster, to reform and remodel the vocational education centres individually to give a wider variety to their 'course trays', create competition among the institutes, and to give the freedom and responsibility needed to become a self-supporting college.

The law for vocational certification (LAC) will give adults a totally new way to gain vocational qualification. It stated that certification should be based on the assessment of vocational competence, "despite the way of learning of vocational skills". This means in practice, that previous learning and work experience shall be benefitted in the LAC-exams and certifications. The certificates are comparable to the youth stage vocational diplomas because the *vocational* content of the two qualifications shall be the same. The structural system of LAC certificates is fixed by the papers of the Ministry of Education, and the names and amount of them and the national and international correspondence by the National Board of Education (NBE). The execution of the examinations is given to the vocational colleges by the Certification Bodies, which are either national or regional and occupational, and which are stated by the NBE.

The most striking reform was to open the certification board to the representatives of employers and employees. In accepting their validity in the certification process of vocational competence, which was formerly (and still is on the youth education) closed and solely the teachers' realm, the door was opened for the rapid and effective influence of working life demands of flexibility.

The representatives of working life are taking part in the formation of the elements of occupational competence and qualification demands. This gives reason to predict that the unions will be more involved in producing the future working qualifications by vocational education, and they will be aware of the need to support and develop vocational education more than previously. Formerly they had a possibility to contribute only on the institutional level: in legislation, national boards and work groups, college led boards, and via local authorities. From now on they can contribute to the local course supply, the contents and goals of courses, and the assessing and certifying of vocational competence by examinations.

In the beginning LAC certificates will be created only for the worker-level occupational skills (level 2 when compared to the British NVQ certifications), but it is possible to expand the system to consist of all the levels of certificates (Handley, 1993). In the creation of the new certificates attention is focused on the British system, Scottish SVQ (which is closer to the Finnish state run educational centralization) (Seddon, 1993), and CEDEFOP activities for the EU common labour market and vocational certification.

FLEXIBLE ORGANIZATION, COURSE SUPPLY, AND LEARNING

The new laws aimed at lowering the rigidity of the highly centralized educational system of Finland and attempts to make it more flexible both to organize vocational adult education services and increase their content as well as their level from the student's point of view. One of the main points in considering the student's view, was to place her/him in the life circle, and open the certification system to accredit student's prior learning. It was hoped that this would motivate the workforce via certification to register the learning which had taken place in work places, and this would further lead to better knowledge of the amounts and types of qualifications of the work force. At the same time it would push a worker to complete her/his competence with something that is still missing.

Life cycle thinking can be seen as a life plan as well. A flexible certification system may lead people to think their careers as a combination of learning phases and work, like a path along which the different types of learning vary, and learning can be the common factor in going further, change or self expression.

FLEXIBLE TEACHING

Teaching in the Finnish vocational education has been based on the national curricula. The NBE papers have controlled the form and content of local schools' curricula and teaching. Today course building for the LAC certificates will be free from the NBE curriculum regulations. The examination itself, its modules and elements will form the goals for teaching but the form of learning is open as far as the target is reached. This will enable the teachers to plan and search new paths to match the flexibility needs of adult students in their different phases of working or life circle. In Table 1 the curriculum based and LAC certification-based teaching are compared.

Table 1. Comparison between Curriculum and Certification Based Teaching

Curriculum based education	Certification based education
National level:	
NBE curriculum orders	NBE certification orders
Local level:	
Curriculum	Vocational LAC exams as goals
College/classroom:	
Teaching according to the curriculum	Free formation of teaching and learning
Assessment of outcomes:	
By the college teachers in college exams	By assessing board in national exams

SOME NOTES

To have a chance does not mean it will be taken. In the Netherlands the teachers' attitudes were the main bottle necks in a similar type of renovation (Streumer, 1993). The teachers shall have all the knowledge needed to pay attention to the adult students' needs in the totally new situation. Their need for a lot of further education in their own profession to expand their capacity to meet the challenges of the new openness of the learning situation shall be accepted. In Finland a state wide programme for the new LAC thinking is organized and the teacher education colleges and their continuing education centres have the main responsibility.

Pilot studies to prepare the new certifications for different occupations have been carried out under the supervision of NBE and of the leading bodies of different occupations. The pilot groups have gathered experience of the functions and dysfunctions of the new system. Certification boards have been set. The development work has been alive and the participants enthusiastic.

The critical voices have not been too many. Teachers of the piloting colleges have asked how the national equality of exams and homogeneity of occupational competence are reached? Some have been worried that there is too much freedom in teaching concerning both the teachers and the students.

The deeper concern is directed to the future of occupational colleges: Does anyone want any more to sit in the classrooms full time if there is an option to gain similar qualifications in working life with open learning and part time studies? The new system for adults will challenge the youth level vocational education by its mere existence. But on the other hand we can think that the development work for the new system and its open discourse with working life demands will benefit all.

A more profound question is the effect vocations, skills and qualifications have on our thinking. The certification and examination based thinking of vocational qualifications hide the idea of vocational competence assessed by 'outsiders'. If we think of occupational qualification to consist of expertise to develop the occupation it demands continuous reflective thinking of the worker towards her/his work in the work tasks, working organization, and production. These kinds of developmental abilities are difficult to evaluate if one is not involved in the working process, 'inside the work'. Even though the competence based assessing and certification system of the LAC composes those kinds of expert ideas very vaguely, it does not decompose them either. If the expertise is seen only from 'the inside' in an occupation it would be necessary that the worker her/himself would assess it, and she/he would be assessed as a developer of one's own work in a very open situation. It is asked further, would the outsiders' certification system itself lead to qualifications and a thin and rigid concept of 'a vocation'? There are fears that flexibility in the future would mean giving in to requirements and promoting superficial thinking in vocational education.

The other 'eternal question' is the demand for academic studies or cultural and social studies as a part of worker's qualification. More precisely how is it related to the qualification as a citizen or e.g. as a member of labour market unions? The British system has solved the problem by building the general NVQ system (GNVQ). The main purpose of that is to create flexibility to horizontal and vertical moves between NVQs and from NVQs to colleges and university studies. The 'general' refers to the generality in the theoretical background of vocational skills (theory integration) and the generality as ways to increase the learning ability.

In certification of vocational skills competence based assessment pays attention to the examination and evaluation of the skills. Very easily the main problem of the structure of vocational competence is passed. In the modularization of an occupation to the examination elements and further assessable units the process is worked out according to the working life qualifications of production. That kind of flexibility the labour market needs or that flexibility which is needed to build up competence in life-long learning are easily forgotten, if not especially emphasized. The aspect of the learner her/himself as a determinant of the structure of the examinations shall be remembered: Are we offering rigid combinations of modules in our 'flexible' examinations in a very 'flexible' way? In the Finnish pilot experiments the candidate's alternatives were very few (Taalas, 1993c, p. 152).

Flexible vocational education needs flexibility in examinations, but the structure of the certification system puts some limits to that flexibility. In Finland the vocational and academic certification systems have been so different, that the pilot experiments to combine them are quite new. The new LAC examinations for adults ignore any possibility to close elements or units from academic studies or certificates, though in some occupations it would be very sensible, e.g. languages in hotel and catering certificates.

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QUALITY CREATION THROUGH APPRENTICESHIP TRAINING

Pentti Hakkarainen

ABSTRACT

This article describes the methodological approach and results of a work-based apprenticeship programme carried out at two Finnish day-care centres. The programme aimed at essential changes in daily work practices and the reorganization of educational work at both units. The goal was attained by revising the concept of apprenticeship. With the tools introduced in instructional interventions, each person involved took an active part in planning and realizing of qualitative changes. Permanent changes in the standard of educational work was observed during the programme and after.

Descriptors: *apprenticeship learning, work-based apprenticeship programme, quality of learning, integration, day-care work*

INTRODUCTION

Apprenticeship education has long traditions in the European vocational education system. It still is a dominating form of vocational education in Germany and has a firm place in the Finnish educational system. Apprenticeship education has gained its position due to its advantages of allowing a close contact with work practice.

Today, Finnish apprenticeship education is a combination of work practice and "theoretical" studies. An apprenticeship programme may consist of "theoretical" studies 5-50 percent of the time and the rest is work practice. Usually, "theoretical" studies are organized by an adult education unit and work practice is carried out in relevant work places. Separate modules in an apprenticeship programme are tied together in a contract between different partners. A local apprenticeship inspector decides which programmes are selected and supported economically. The inspector has the responsibility to evaluate and control the success of the programmes.

In the traditional apprentice system, learning at work is based on the relation between a master and an apprentice. A master is the source of professional knowledge and skills. In the modern apprentice system, usually, one experienced worker takes the responsibility of a tutor. A tutor is rather an initiator than an instructor. He/she evaluates the progress of an apprentice in work practice. It is assumed that the work contexts and tasks are effective learning assignments as such. Usually, no academic teaching is organized at work sites. Task rotation and work place changes are encouraged during a practice period, if possible, because rich personal experience is assumed to be the key factor in apprentice learning.

There are two basic problems in the Finnish apprenticeship education model. First how "theoretical" studies are integrated with learning in work practice and second how learning takes place in work contexts. Often "theoretical" studies are compiled of separate short courses on different themes. For instance an apprenticeship programme for day-care nurses may include an elementary course in developmental psychology, preschool education, sociology, child care etc. The courses are delivered in a traditional manner, i.e. a lecturer gives lectures and paper and pencil tests are organized at the end of each course. There is no learning transfer between theoretical studies and work because "theories" and practice are independent modules in the programme. Different persons, usually, are responsible for organizing basic modules and do not integrate the modules.

Models of "cognitive apprenticeship" (Collins et al, 1989) are constructed to solve the problems described above. Best results are received in the Finnish apprentice education in a situation in which professional skills and knowledge can be demonstrated in an external form. The learning situation is much more complicated in professions in which cognitive skills are "hidden". Our case is an apprenticeship program for day-care center personnel.

The focus of cognitive apprenticeship ideas is on student learning and traditional concepts on learning are rightly criticized. A transition from instruction and transmission of knowledge towards meaning-making and sense-making is proposed (Berryman, 1991). There are interesting viewpoints in cognitive apprenticeship models which can be used in the development of apprenticeship programmes: 1) integration of vocational and general education is based on domain knowledge, 2) the workplace is not automatically a good apprenticeship learning situation, 3) an effective learning situation is composed of coordination between four basic elements "content", "methods", "sequence" and "sociology".

The cognitive apprenticeship model is the best attempt to solve the dilemma of combining theoretical and work-based learning. But it cannot overcome the limitations of cognitive science. A serious dilemma is how the basic elements are united in the cognitive apprenticeship model. They come from different theoretical traditions and resist integration as such. The integration attempt takes a broader view on learning, but this is integration between existing forms and contexts of education. Instead, a completely new model of apprenticeship learning is needed. Cultural-historical activity theory offers alternative conceptual tools for overcoming the problem of "theory and practice" in learning situations.

The U.S National Council on Vocational Education presents cognitive apprenticeship models as a main vechicle for organizing "quality" vocational-technical education. What does "quality" mean in this context? In short, quality is the best, internationally competitive vocational-technical education. A detailed list includes the following elements: close relationships with industry, experienced instructors, vocational student organizations, integration of academic and vocational concepts, coordination of secondary and postsecondary programmes, career awareness and planning for students, coordination with technology education and constant improvement of programmes.

INTEGRATION OF THEORETICAL AND VOCATIONAL LEARNING IN APPRENTICESHIP PROGRAMMES

Cognitive apprenticeship models were originally developed to solve the limitations of theoretical classroom teaching. From this standpoint the traditional idea of learning transfer is important. The problem is how learning in the classroom context affects learning and action in work sites and vice versa. Studies by Resnick (1987) and Morris et al (1985) show lack of transfer of theoretical principles, processes or skills learned in classroom to professional practice or of skills demonstrated in professional practice to classroom situations.

The traditional idea of transfer is based on two separate processes: learning and implementation or application of learning results. The unit of learning is a single individual in two different contexts. But the context is just external conditions of behavior or the source of problems to be solved by the individual. This traditional idea of transfer is not a very fruitful point of departure for attempts to integrate theoretical and vocational learning. It is necessary to redefine the concept of learning and the idea of transfer.

The situational cognition -approach (Lave & Wenger, 1991) stresses the importance of context in learning in a new way. The basic critique against learning theories is that learning is a separate phenomenon from other activity contexts. Learning takes place according to learning theories in special circumstances arranged for learning. Lave (1993, p. 6) writes: "Conventional theories of learning and schooling appeal to the decontextualized character of some knowledge and forms of knowledge transmission, whereas in a theory of situated activity "decontextualized learning activity" is a contradiction in terms."

Lave (1993) adds some important characteristics to her contextual approach which are part of her critique of traditional learning theories. In practical work situations knowledge and learning will be found distributed throughout the complex structure of persons-acting-in-setting. Learning cannot be found in an individual head or in the external environment, but in the relations between them. The idea of distributed nature of learning changes radically the unit of analyzing learning. Instead of an individual learner's actions cooperative learning efforts should be analyzed.

Traditional learning theories have a tendency to assume a smooth progress of learning in which an individual is gradually assimilating new knowledge and skills. Situated and distributed learning emphasizes heterogeneity. In a distributed learning situation there are multiple actors which have different goals, motives, conceptions and skills. A common effort creates conflicts and tensions between different actors.

The idea of learning in conflictual situations changes the nature of essential kowledge. Lave (1993, p. 15) describes this in the following passage: "Analysis focused on conflictual practices of changing understanding in activity is not so likely to concentrate on the truth or error of some knowledge claim. It is more likely to explore disagreements over what is relevant; whether, and how much, something is worth knowing and doing; what to make in ambiguous circumstances; what is convenient for whom, what to do next when one does not know what to expect, and who cares most about what."

The invention of new knowledge in practice is not in the focus of traditional learning theories. Learning theories are interested in situations where transmission, internalization or transfer of existing knowledge takes place. An interesting problem is how people learn to do things that have not been done before. This is the basic interest in Engeström's (1987) elaboration of the concept of expansive learning. Expansive learning is a collective effort to produce historically new culture, phenomena and knowledge. The production of something new requires processes of thinking beyond the immediate situation in more general terms. There is a permanent tension between acquiring existing knowledge and creating something new.

Lave (1993) points out that traditional learning theories are unable to explain and conceptualize phenomena called nonlearning or mislearning. The alternatives are either to assume that nonlearning results in an individual's refusal or inability to learn. But it is possible to show how nonlearning or mislearning are historically situated phenomena. The whole situation may be socially constructed in a way which does not promote learning or errors are built in the system and its cooperative relations. Perrow (1984) shows convincingly how human accidents in a technical system may be part of the system itself and are socially constructed phenomena.

An interesting attempt to apply some ideas on learning presented above is made in an approach called "learning the ropes" by Hart-Landsberg et al. (1993). Learning is analyzed in natural work place interaction by 'shadowing' persons in daily situations and by interviewing them later on. Shadowing pinpoints problem situations and cooperation aiming at solutions. Learning is analyzed as every day problem solving in work practice. Apprentice education is not a special research theme in this approach, but learning in work practice is the main focus as well as in legitimate peripheral participation approach by Lave and Wenger (1991).

Both approaches underline the cooperative nature of learning. But learning is divided into individual units. Hart-Landsberg et al. (1993) use the term assisted learning. The idea of assisted learning presented in the paper takes the individual as the unit of learning. Individual learners are assisted by coworkers to attain their individual zopeds (zones of proximal development). Zoped can be seen on other levels, too. There is the level of teams, groups and organizations. If learning is a shared enterprise, zoped and assisted learning should be defined in mutual terms at least.

Learning the ropes seems to represent trial and error -type of learning in which the object of learning is not actively selected by the subjects. Instead learning is based on problems, confusions, controversies and dilemmas met in daily workprocesses. The activity system is not the object of learning, but daily procedures. Activity systems are not learned by trial and error learning. We can talk about learning in activity systems, only. In order to change the type of learning a planned instructional intervention is needed. Instructional intervention differs radically from formal instruction.

The conclusion concerning the limits of learning in abstract theories is correct. But assisted learning in practice is not the solution or collaboration and cooperation as the method. Didactic solutions are needed which combine in a systematic way theoretical and practical in the same process. (How a good theory is learned best in practice). A theoretical perspective has to be constructed systematically in practical work and work-based learning. The relation between individual learning and activity system has to be shown.

A crucial point is how individual learning changes the activity system or how activity systems generally change and what role learning plays in it. The relation between individual and organizational learning is an open dilemma in these approaches. Usually contradictions of an activity system are analyzed in order to change the activity system. What is the relation between individual conflicts, dilemmas, problems and contradictions of the activity system?

The concept of situated learning or assisted learning takes work practice as a starting point. Work practice is the context of learning and its counterpart, decontextual learning, is not as rich and many sided. A critique is levelled towards ideas of powerful generalizations which frees persons from time, place and ongoing activity. There is an assumption of the disinterested character of knowledge and institutions behind this idea. Lave (1993, p. 24) formulates her point in the following way: "From this, assumptions are derived about the privileged character of schools and of therapeutic encounters as sites where knowledge is produced, where learning takes place, but where what is learned is independent of, and not affected by, the circumstances in which it is produced. Further, it is assumed that what is learned is of general nature and powerful because it is not embedded in the particularities of specific practice."

The situated learning approach underlines the importance of the work context and parallel learning processes which are not possible in a classroom. This makes classroom learning and learning from practice opposites. Ruptures between formal instruction and situated learning or lack of transfer have been more interesting themes than the possibility of a positive connection between formal 'decontextualized' instruction and learning from work practice. Conclusions made by Hart-Landsberg et. al. (1993) concerning the minimal use value of formal learning from the point of view of work practice are valid. But this fact does not eliminate the challenge of apprentice education: how formal studies are best combined with learning in work practice.

The message of the situational learning approach for integration of theory and work-based learning is clear: classroom learning situations should be changed radically towards every day learning. Participation in different contexts is instructive and theoretical formal instruction is not necessary. This is a positive move in the development of a learning concept toward the contextual and cooperative direction. But it does not solve the integration task. There is an analysis on the specific role of theory and work-based learning. For what they are needed and how can they enrich each other?

Work-based learning is an open learning situation in which permanent guidance is absent. The learner has to find out what kind of knowledge is essential. There are no formal learning tasks, but learning is immersed into work activities as Lave (1993) has pointed out. On the other hand, work tasks and problem situations in work are effective learning situations. There is a clear difference in learning motivation in favor of work situations.

Knowledge-based classroom learning is a structured and guided activity. Essential knowledge is defined by the teacher and learning tasks aim at mastery of this knowledge. Traditionally the teacher organizes the learning situation, gives the assignments for students, controls the prosess of solving the tasks and evaluates learning results.

In our work, we have tried to integrate theoretical and vocational learning in the frame of Finnish apprenticeship system by defining the special functions of both learning contexts. In our approach classroom learning has a methodological function in relation to work-based learning. The apprentice's learning in work contexts is structured by research tasks and classroom learning is an introduction for each research period in work contexts.

A Finnish apprenticeship programme presupposes that an apprentice carries out practical work during her/his contract. The research tasks were combined with the actual work e.g. with the help of apprentice dyads. Half of the time one person carried out work while the other one videotaped or observed the work process. The roles were changed in the middle of each period.

INTEGRATED WORK-BASED APPRENTICESHIP LEARNING PROGRAMME

The situational learning approach describes the context of traditional apprenticeship learning as a community of expert practice. The core of learning is transmission of expert knowledge to the beginners in the trade. Cognitive apprenticeship models are the alternative for the traditional expert practice model. But the scope of characteristics of cognitive apprenticeship is narrower than the characteristics of a community of expert practice. The examples of cognitive apprenticeship given by Berryman (1991) are typical classroom project assignments (building a solar-powered car, designing the six-room interior of a historical Victorian house, redesigning the American Constitution). The community aspect seems to be critical in cognitive apprenticeship.

In our approach, real work units and their communities were included in an apprenticeship programme. E.g. all persons working in a day-care center made an apprenticeship contract at the same time. The aim of our programme was to develop the whole community, not just individual workers or novices in the community. As a matter of fact there are three parallel learning programmes: individual, team level and the whole community in a unit. These levels were integrated by using developmental work research (Engeström, 1987) as the methodological frame.

Our programme aimed at developing educational work in a day-care center by using research methods as key instruments. The total time of 2400 hours was divided into five theme periods. Each period consisted of classroom instruction and work/research tasks with regular methodological guidance at work sites. The following five themes were included in the programme:

1. Educator's Work Process: Structure and Development

The theme is an introduction to the programme as a whole, and it aims at forming a theoretical basis for the development project of a day-care unit. The traditional approach is turned upside down. There are no traditional academic elementary courses, but different elements of work process are introduced and a holistic model of work is sketched on the basis of the work of the unit. The needs for new knowledge and educational skills are derived from the analysis of work processes in the day-care center. Developmental challenges in the educator's work are not disciplinary problems just in one scientific domain. The educator's domain specific knowledge has a multidisciplinary character.

The primary function of this theme is to offer analytic tools by means of which the students are able to analyze the educator's work (their own work) as a whole set of activity systems. Conceptual research tools are introduced from different scientific approaches as soon as modelling of concrete work processes makes it necessary (The students express the need: How can we know more? or How can we study this?). Analytic tools of an activity system are not limited to descriptions of present states of the system. Their main function is to find out the dynamic nature and developmental potentials of a system. Tools for analyzing historical development of day-care are introduced at this stage and they are used for describing local history of a day-care center.

2. Research on One's Own Work

This theme aims at promoting a deeper understanding of one's own work with the help of systematic research. For that purpose daily situations at work are recorded, videotaped and observed by the students. As the students are working and studying together, mutual documentation of daily situations is possible and individuals and groups can concentrate on different aspects of the common activity system.

During this theme specific efforts are needed for demonstrating how students specific research problems are connected with the whole activity system. Developmental work can be carried out on the level of an activity system and individual efforts should be related to the activity system as a whole.

3. Development of the Theoretical Background in Educational Work

Usually theories are taught eclectically and separated from each other and there are few attempts to relate theoretical ideas to practical work systematically. This theme starts with the analysis of the theoretical background behind selected practices at work (e.g. lessons, play, work tasks, physical exercises, meals, naps etc.). They are related with the historical development of theoretical ideas in scientific research. The aim of the theme is to make visible professional thinking and its relation to scientific research. Present conceptions of the object and central instruments of educational work always represent different historical stages of theoretical thinking. This is why it is necessary to find out the historical development of the theoretical background in educational work and its role in the development of work practice.

Disciplinary concepts in academic instruction are not independent units in educational work. Educational tasks and problems in work practice are not disciplinary problems. In the same situations there are simultaneously present psychological, sociological and philosophical aspects. A real challenge in the apprenticeship programme is how educators can discern parallel disciplinary aspects in educational situations and how scientific knowledge from different disciplines is applied integratively in decision making.

Disciplinary theories have different relevance depending on the systemic level. Sociological theories and concepts are perhaps more relevant in describing and analyzing social structures and relations of the community. Psychological theories and concepts have traditionally stressed individual psychic processes. In the activity theoretical model, disciplinary aspects are not independent or sufficient.

4. Development of Childhood and Children's Activity Systems

This theme underlines the importance of the object of educational work in a day-care center. The object is analyzed in terms of two-level historical development. Day-care work has an important role in the historical development of modern childhood. This level is usually omitted when individual decisions are made in education. Childrens' individual development is closely connected with the general contexts of childhood. Knowledge of historical changes forms the basis for the development of concrete educational work.

Persons working in a day-care setting often talk about children's development, but demonstrating which factors are behind developmental changes is a hard task (Hakkarainen, 1990). Modeling of children's activity system is used as a tool for making developmental mechanisms visible.

5. Developing the Activity System of a Day-Care Center

This theme integrates separate innovations into a systematic developmental programme on the level of work routines. At this stage needs are transformed into a new model of activity system. The production of concrete new tools and a new division of work are necessary. Students are responsible for developmental work as well as for necessary research tasks. The role of the teachers is changed radically in comparison to traditional apprenticeship programmes. The whole apprenticeship programme is co-constructed together with the students and the teacher is responsible for methodological guidance. The teacher cannot solve students' problems and does not have ready-made solutions beforehand. Development is created and co-constructed during the programme.

BASIC TOOLS OF WORK-BASED APPRENTICESHIP LEARNING

Problem Orientation

Work-based apprenticeship learning presupposes development of new conceptual and practical instruments which can be used in daily work. Our programme started with team interviews and a set of questions in which the educators described their work from their individual point of view. At the same time a questionaire was presented in which each participant described basic traits of their own team. Each team videotaped a sample of every day activities which they thought (defined) problematic or successful.

The educators answered the following questions under the heading "My thoughts on day-care work":

1. If I had the possibility to change anything in the work of this day-care center, I would.......
2. My ideal day-care center....
3. I think I am excellent in......
4. My professional skills could be better in...
5. Co-operation does not work in our group because.....
6. My best results in this team/child group are.....
7. The main obstacles preventing attaining the goals are....
8. The most important principles which I would not discard in any situation are....
9. The purpose of day-care work is, in my mind,.....
10. What principles are followed/should be followed in your team's work...
11. The following aspect should be taken into consideration while developing day-care work...

A simple frequency count was carried out and themes found in their answers were presented for the participants in the first seminar in the beginning of the program. The material was gathered and the seminar was organized in a way which made it possible to confront the educational goals and ideals with practical procedures in daily work. The discussions revealed that the ideals presented by the same persons contradicted each other. If you wanted to follow one ideal (e.g. consistent behaviour of all adults) you could not follow the other one (e.g. individual educational style of each educator), which rated as important as the first one. The introductory work was continued by assigning a task according to which each team had to point out which ideals and principles were followed or neglected in their videotaped work situations.

The introductory seminar revealed an interesting contradiction in team work. All teams presented as their opinion that their team is an excellent team, because they do not have fights and they easily agree on everything. Individual team evaluations given in the questionaire had all the same pattern. In the five point scale all the answers with few exceptions were marked at the one end (5-3). But the written answers by some individuals indicated that the teams are not discussing real problems openly. Usually one dominating person in a team presents her ideas and the others accept it in spite of their inner reservations and protests.

The contradiction of team work was not presented in the seminar by the conveners. They described, instead, how excellent teams work. At the end of this presentation the first comments were "We have always thought that our teams are the best teams in town. But it seems to be that we are only work groups. We cannot discuss openly with each other and admit what our problems really are". After that it was decided that each team would start recording team meetings in order to develop instruments of team work.

Dialogues and Self-Reflection for Defining the Zones of Proximal Development

It is assumed in our approach to work-based apprenticeship learning that a parallel planned change in daily work routines on individual and team level is needed. For us, apprenticeship learning is not just individual acquisition of present work procedures situated in a day-care center. There is a double task to be solved in apprenticeship learning: 1) How to change work orientation, motivation and professional thinking on personal level? and 2) How to define the common object of educational work on team level?

This double task was combined with the help of the cultural-historical activity concept. Its basic tenet is that there is no principal difference between visible and inner activity (Leont'ev, 1978). When a person is trying to change something outside himself he changes his psychic world at the same time. From this point of view human activity has dual results: psychic and material. Mott (1992) tried to describe dual effects of human activity with the help of Figure 1.

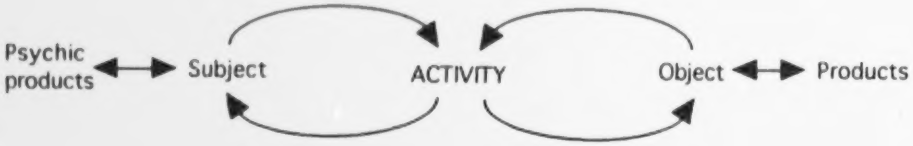

Figure 1. Dual Results of Human Activity (Mott, 1992, p. 32)

The dual nature of human activity is reflected in developmental dialogues which were adopted from the systems development approach by Mott (1992). At the individual level, the dialogue is an instrument for defining the individual zone of proximal development at work. The first stage is a discussion which is tape recorded. The discussion is transcribed and the text forms the basis for the next step. The second stage is an attempt to define the individual zone of proximal development and a timetable for realizing the goals set in the zone.

The situation for defining the zone of proximal development is not an ordinary interview. It is a study of the work context and the personal situation at work. The aim of dialogue is to study resources, possibilities and limitations from a person's viewpoint in order to reveal the motives to develop personal work. The following themes are discussed during the two-stage process.

1. Background information
2. Professional domain
   -central tasks, work methods and instruments
3. Social domain
   -division of work and forms of cooperation
4. Personal domain
   -emotional reactions, means of creating personal competence
5. Defining the personal zone of proximal development
   -what could be changed, what you want to learn to do better

It is underlined that the situation is an attempt to define a personal perspective to work from the participants' point of view. A person is trying to define her own zone and the instructor is helping her in that task. The answers are correct only for the person herself. The questions are made in order to promote one's own thinking and a person has the right to deny answering any question and the reasons for denial are not asked.

Before the second session a person reads the transcribed text and prepares for the second dialogue by answering in writing the questions: 1. Which were the three most important themes in our first meeting? 2. What could learn from our discussion? 3. Choose three ideas which you would like to develop further. 4. What is good in these ideas and what are the difficulties? 5. What is the most promising idea from your own point of view? 6. What goals could be defined? 7. How could you start?

During the second session a person's ideas are discussed and the model of the zone of proximal development is compared with the model constructed by the instructor on the basis of the first dialogue. A concrete programme is designed for each participant with timetable and assessment criteria.

After constructing individual zones of proximal development the zone of proximal development was defined for each team. It was based on team interviews, analysis of team meetings and videotapes on a team's work. Each team member's individual zone was discussed and related to team development. But the revision of individual plans was left open. The discussion concerning a team's zone of proximal development was divided into three domains: 1) How to develop the instruments by means of which the definition of a team's common object of educational work can be developed, 2) How to develop instruments of team work, and 3) How new models of the division of work can be developed.

The next step of defining the zones of proximal development was the level of all teams of a work site. Intensive discussions in each team started a process of experimentation and changes in teams, but other teams were not informed. The same problems were solved parallely without change of information. Some team members told us that it was too early to start any discussions on what other teams do, because they just started to apply new methods of team work.

The perspective and possibilities of coordination and cooperation was demonstrated in a seminar in which all teams participated. The seminar was organized for educators and parents of children visiting the day-care center. Each team had the task to present for parents the changes which took place in educational work and new ideas of developing educational work further. A panel was organized in which the representative of each team summed up what was carried out in educational work during the last half year. The work profile of each team was drawn and all profiles were demonstrated on the wall. This made it possible to compare how much parallel work is carried out what could be learned from the experience of other teams.

The next zone of proximal development was defined on the level of the whole day-care center. The comparison of team profiles convinced the participants that they do not want to create a narrow-profile day-care center (music, sports, arts), but a quality customer service day-care center based on broad educational profile. The problem of profile definition opened up the discussion on cooperation with the parents and other partners in educational work. It was stated that parents should have the possibility to take part in educational work to a greater extent and tools for cooperation with parents should be developed.

Redefining the Object of Educational Work in Day-Care

There is a tradition of individualistic approach in education according to which development takes place in each separate child. If an educator wants to play a role in children's development she has to find a proper channel for influencing each individual child. Another tradition comes from didactic thinking in teacher education according to which a teacher's didactic skills are revealed best in handling a group of children. The management of a group is a test of teacher's organizational skills rather than educational ones (Hakkarainen, 1991).

The second problem in educational work is the definition of the nature of institutional education. Historically day-care work compensated mother's child care at home. In that work there seldom are any explicit educational or developmental goals. Institutional day-care work has clear educational goals and objectives trancending traditional basic care. There is a permanent tension between these viewpoints. Persons working in day-care have to decide in practice how much they pay attention to educational goals or are they just giving basic care (Hakkarainen, 1990).

Our programme of work-based apprenticeship learning started at the moment when economical resources were cut radically. There were more children in each group and no possibilities to hire any substitutes during sick leaves. In this situation there were fewer opportunities to work with only one child at time. Discussions on theoretical views of the sources of development gradually changed the simplistic cause-and-effect conception of educational influence. Instead of moving one big group from one place and activity to another, children's activities are now organized mainly in small subgroups. Instead of guiding individual children, activities are guided and children are allowed to move freely around.

Activity orientation involves children and their parents as active subjects in planning daily programmes. Instead of direct orders and instructions adults have moved to indirect guidance in their work. Conflicts and controversies are transformed into problem situations to be solved by the children with the help of adults. The programme launched active experimentation on daily work processes. The team is actively searching for alternative methods for organizing their work.

There are new projects which are based on children's cognitive problems. Such problems as what is in the space or what is inside the globe are studied jointly by adults and children. The original problem is presented by the children and a decision is made to start a project which includes visits, reading, picture making etc. The main difference compared to earlier approach is that an adult gives the children an equal position to steer the study process and the theme is not closed by the adult by telling at once everything what she knows about it.

QUALITY OF APPRENTICESHIP LEARNING

The criteria of the quality of learning depend on how we understand the nature of learning. Lave's description of the situated and distributed nature of learning above change our conception on the quality of learning. Quality is a relational phenomenon and there are no absolute quality standards. But there are some general aspects in the situational and distributed approach which can be used in describing qualitative traits of apprenticeship learning.

The social and cultural context is an important factor in apprenticeship learning. The quality of learning cannot be characterized without contextual traits. Traditionally transfer of learning has been a central criterion of the quality of learning. High quality of learning is demonstrated by the individual mastery of complicated work situations. A skill is first learned in one situation and then applied in another. The problem of transfer is transformed in the new approach into the problems of cooperation and integration.

If mastery is understood as joint construction of solutions in a context, the quality of learning is not a sum of individual behaviors. Individual efforts have to be integrated and coordinated in any context and coordination is an organic part of learning. One aspect of the quality is how coordination is carried out and how mastery is co-constructed in problem solving and other learning situations.

The constructivist approach to the evaluation of the quality of learning changes the idea of quality. The metaphor of quality was earlier a barrel of good wine. The taste remains equal as long as some wine is still left. There is a standard for good quality and all wines fulfilling the standard are quality wines. The quality of learning from the constructivist viewpoint has to be evaluated according to the degree of creating new quality and new criteria of quality. All traditional quality systems (ISO, TQM, QFD, TQC etc.) are based on standards. Learning in these systems is understood as problem solving and standardization of good solutions (Hakkarainen, 1995)

In our case of apprenticeship learning the problem of creating new quality was obvious. There were two day-care units in the programme. The second one was founded a year earlier. The personnel planned carefully the principles of their work and tried to avoid the usual pitfalls of day-care work. But after half a year's work there was a deep crisis: dull daily routines, compulsory activities, norm conflicts, disagreement between adults etc. In spite of conscious goal setting these problems could not be avoided.

The paradox of this unit was that all adults were conscious of the usual problems in their work, but they did not have proper tools for constructing a model of work which would have helped them to attain the goals. It seems to be so that a mere possibility to create new quality of work is not enough. In a relatively short time the work gets routinized and "normal" problems are constructed in spite of good intentions.

What are the indicators of quality in day-care work? Our experimental units of day-care work participated in a project which used quantitave indicators of day-care work as the basis for administrative decision making. The mean of 40 items was counted for each day care center. The mean changed e.g. from 6.7 to 7.3, but this does not reveal any qualitative changes in work. Instead anecdotes and stories tell a lot more about new quality in work.

A decisive change, according to observations, is the change in children's position in all activities. Their problems, questions and plans are taken seriously and they form the starting point for the daily work. This was earlier possible only in children's own plays for a limited time during the day. Now children are equal partners in planning activities and carrying out the plans. Some parents are now having problems because their children have started to stay up early in the morning and want to go to day-care center much earlier than before.

Educators say that their stress is eliminated now when they are more open to discuss any problems in their work. It seems to be so that stress and burn out is a result of routinized work which is monotously repeated from day to day. Experimentation and readiness to do everything in a new way creates new motives for work.

Search for new forms of work has changed educators' relation to parents. The greatest challenge in the Finnish day-care work is, according to interview studies, contacts with parents. A normal contact can be described with the following comments: Parent: "How was the day". Educator: "Everything was ok. There were no problems". The general message is "don't worry we take care of your child". As a matter of fact minimal information is transmitted voluntarily through daily contacts if parents are not more demanding. This obvious lack of information is patched by organizing meetings for parents during which parents are informed about educational activities in childrens' groups.

The experimental programme started a new partnership with the parents. The parents were invited to work a whole day or a shorter time in the day-care center and new forms of information transmission were started. The daily contacts turned into educational discussions where parents also told about their observations and ideas to develop educational work in the day-care center. The new atmosphere revealed that parents had a lot of good ideas for developing the daily contents of activities and eliminating unnecessary routines. Earlier they did not dare to reveal their ideas because they were afraid of getting a bad reputation among educators if they intervened in the educators' work.

How were new qualities created in the programme? One of the most important factors was the scope of intervention. Apprenticeship learning was stimulated on three levels parallelly: 1) on the level of individual work, the zone of proximal development was constructed, 2) on team level, the zone of proximal development was defined and new instruments of team work were developed, and 3) on the unit level of 6-7 teams, the specific profile of the day-care center was designed and cooperation between teams was started.

Our apprenticeship programme has an inductive approach. The process started from individual change and ended at the general unit level. But levels or steps are not independent. The elaboration of the zone of proximal development on the team level makes it necessary to revise and elaborate individual plans. The same problem has to be solved when team plans are related to the profile of the educational work on the day care unit level. The logic of the programme is based on the parallel change in a learning unit and its context (individual learning in the team context, team learning in the day-care center context etc.). We suppose that planned changes cannot be realized without parallel changes in the contexts.

On the basis of stories told during the experimental programme we can assume that in our work-based apprenticeship programme we have succeeded in developing instruments which change the communities of practice. Without this change there are no perspectives in our developmental work.

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SELF-EVALUATION IN ADULT EDUCATION

Matti Ropponen

ABSTRACT

The article discusses a project implemented with a view to changing the activity patterns of adult education organizations in Finland. The project aimed at generating modes of activity where the organizations themselves would specify their objectives, plan ahead as far as possible, and evaluate their results in accordance with evaluation criteria that have been set beforehand. The article starts out with a presentation of Finnish adult education and of the adult education organizations that have taken part in the project. Then recent developments in the ways of managing adult education are traced and an analysis made of the changes that the shift to management by objectives and self-evaluation of the adult education organizations and institutions has caused. After this, a project that was launched to effect these changes is described along with the objectives that were set up and the work methods that were used. Finally, the main results of the project are summed up.

Descriptors: *adult education, mode of activity, management by objectives, evaluation of educational outcomes, self-evaluation.*

INTRODUCTION

Adult Education Organizations in Finland

The system of adult education in Finland is the result of a historic process. It has not developed as a result of any formalized legislation or structural decisions. It is the outcome of spontaneous attempts to satisfy specific educational needs. Finland has a little short of thirty different adult education organizations, all of them with a purpose, mode of activity, and target group of their own. Most of these organizations are financially aided by the government. The annual financial support to be appropriated to these organizations from public funds is determined by Parliament. Adult education organizations receiving aid from public funds are as follows:

- adult education centres
- folk high schools
- colleges of physical education and training
- music schools
- correspondence schools
- mature student departments of upper secondary schools
- cultural organizations
- study centres
- home economics extension organizations
- crafts and design organizations
- adult vocational education centres
- mature student departments of vocational institutions
- further education and course departments of vocational institutions
- educational institutions maintained by industry and commerce
- apprenticeship training
- further education centres of universities and other institutions of higher education
- summer universities

Public funding is extended through other state authorities to organizations that primarily focus on consulting private entrepreneurs and business enterprises. Still, a number of organizations arranging general and vocational education remain outside public funding.

New Challenges to Adult Education Organizations

The effects of the international market mechanism and of the economic recession of the 1990s has brought Finnish adult education organizations face to face with a situation very much different from that before. Government appropriations have been severely cut back and the organizations now confront a situation, where they are forced continually to prove their raison d'être and to procure an ever increasing portion of their financing from the market itself. In order to meet this challenge and to justify their existence and a continued development, all adult education organizations have to be able quickly to change their modes of actitivity and procedures. The change has to occur specifically in the management of the organization. Activities have to be goal-oriented and the means of evaluating the results methodical and systematic.

The first among the organizations to come up against this new situation were the vocational course centres, as their manner of operation through decisions in principle and as a result of legislation were tied up exclusively with the needs of the market. The educational authorities, however, had the right in 1991 and 1992 to organize and finance the modes of operation of the adult vocational education centres and their plans for promoting new activity patterns, thereby enabling the shift from a system of annual appropriations in the national budget to a system, where expenditure is financed by the courses sold on the market.

In order to assist other adult education organizations in speeding up their adaptation to the new situation and to further support the development of the adult vocational education centres, the Finnish National Board of Education in 1992 launched a project for the development of a result-oriented management and a system of self-evaluation of the adult education organizations with a view to developing the modes of operation and the activity patterns of the organizations that better meet the requirements of an ever-changing modern society.

The steps and measures of the project launched by the National Board of Education concern five different organizations of adult education. These are

- the adult education centres
- the folk high schools
- the cultural organizations and the study centres
- the home economics extension organizations and the organizations for crafts and design
- the adult vocational education centres

In the following the adult education organizations taking part in the project are briefly described, after which such national and international developments are discussed being import to the modernization of the modes of operation and activity of these organizations in Finland. Concurrently, a description is given of the expectations relative to these new modes of activity. Finally, the project for the development of a result-oriented management and the self-evaluation of the adult education organizations launched by the National Board of Education and the main results of this project are described.

ADULT EDUCATION ORGANIZATIONS SELECTED FOR THE PROJECT

The Home Economics Extension Organizations

The roots of Finnish home economic extension organizations reach back to the turn of the century. These organizations came into being to support and further the position of women, the family and the home in Finnish society by disseminating among our women skills and knowledge bearing upon matters of national importance, such as the standard of popular education, the home, nutrition and domestic industry. Of these organizations the Finnish Crafts and Arts Organization promotes Finnish handiwork and Finnish culture and industry. Of the home economics extension organizations the Martha Organisation and the Swedish Martha Association of Finland advance the economic, spiritual and material wellbeing of the homes and families, and the protection of the environment. Our third home economics extension organization, the Centre for Country Women and Homemakers, focuses on the promotion of the vocational retraining of housewives, their (further) training in home economics, and the raising of the general economic, cognitive and spiritual standard of the homes in the countryside (Luutonen & Ropponen, 1994).

The Work of Liberal Education Organizations and Study Centres

Liberal education in Finland had its inception in the latter half of the 19th century. Its birth was pushed by the many popular movements that had emerged in the wake of liberalism to propagate new ideas. Organizational education played an important role in tsarist Finland as a political alternative social movement. In the first years of national independence various forms of co-education merged, becoming the main form of organizational education, as groups of people studying together under the guidance of tutors started forming regular study centres. The financial aid appropriated to organizational education by the state was channelled, from the 1920s onward, to the study centres maintained by organizations. This, ultimately, led to the founding of study centres in their own right (Rantanen & Saari-Musakka, 1994).

Today there are 10 study centres in Finland maintained by educational organizations having a very varied ideological background. Six centres reflect the ideologies of political parties represented in Parliament, one has a Christian background, one is sponsored by whitecollar organizations, one by youth associations and one has a very broad organizational background.

The home economics extension organizations and our educational organizations have together experienced quite difficult times in the course of the country's history. Notwithstanding all this, the postwar period up to the early 1990s appears to have been a time of stabilization and steady growth for these organizations.

Adult Vocational Education Centres

Education to further employment was begun in Finland as early as in the first years of the 20th century. Institutions imparting training in handwork were founded for the unemployed, where training was given in some simple, easily-acquired and sustenance-bringing trade. Employment training in the true sense of the word did not start until the 1930s, when alongside with relief work employment-furthering courses were arranged for women, young people and officials. This activity greatly expanded in the early 1970s, when a new law came into force, permitting the setting up of individual course centres and the arranging of courses within the framework of a year-round budget (Katajisto, 1994).

Folk High Schools

The ideological background of the folk high school movement is to be found in the many ideological tenets of the 19th century. The most important of these is the movement for popular education originating at the turn of century from the nation-state movement. Idealism is a common denominator to these schools, even though, at the same time, it sets them apart from one another. The first folk high schools in Finland, established in the 1890s, were founded in the spirit of the Dane N.F.S. Grundtvig (d. 1872). The ideology behind them was the fanning of an incipient, as yet only smouldering, national awareness into a blazing patriotism in support of Finnish autonomy. Since the 1910s all new folk high schools have had a Christian background, setting them apart from the rest by having religion and church history included in their syllabi. The first folk high schools in Finland were founded in the 1920s. These folk high schools are backed by political ideologies and the trade union movement alike. Although well-organized, interest groups in Finland were still pressed for educational services (Yrjölä, 1994).

Adult Education Centres

The first adult education centres, termed workers' institutes, were founded in the towns, when Finland was still an autonomous grand duchy of Russia. The very first one was set up at Tampere in 1899. The centres came into being for historic reasons to serve the educational needs primarily of the working class. In those days only part of the adult population had received primary education and only very few, in the main the children of the educated class, a secondary one. The workers' associations together with the enlightened intelligentsia supported the founding of workers' institutes. Although the name of the new institutions was workers' institute, it was stressed from the beginning that these institutes were meant to serve all public circles. After the Civil War all new adult education centres together with the workers' institutes that had been created earlier by the workers' associations, were commonly termed civic institutes. The number of institutes grew steadily in step with the growing affluence of the country, making possible the founding of civic institutes also in the countryside in the 1960s. All adult education centres today are owned by the municipalities (Määttä, 1994).

POWERS AND MEANS OF STEERING ADULT EDUCATION IN FINLAND AND ELSEWHERE

The objectives and social status of adult education have changed considerably over the past few decades. After an earlier centrally directed steering of educational policy, adult education today is seen in Europe and in North America alike, as an increasingly essential part of the educational system and national education policy. As educational budgets dwindle, the national goals of adult education become more and more political standpoints on the significance of adult education, stressing ideal objectives or broad visions of development. Moreover, when steering the educational system, supervision has ceded to incitement, as schools are given greater power of decision and are more and more required to look for financing outside the national budget. The policy exerciced by the government might well be called an engagement strategy. The objectives of a centrally directed adult education has increasingly become dependent on the schools' capability of perceiving, of being sensitive to the demands of the labour market and of educational services in general. Typical of the situation is the fact that a condition for the continuity of a school also in the future is its capability of competing successfully for students and capital (Hölttä, 1993).

The real responsibility for supplying its clientele with education is in many countries being transferred to the schools or the educational organizations themselves. Adult education is more and more becoming a commodity to be bought, i.e. being something that has an instrumental economic value to the individual (OECD, 1989, 1991a-e). In the discussions on education notions like competence, achievement, effectiveness have superseded notions such as knowledge and understanding.

The fact that education is becoming a commodity is typified by the following features:

- Education must be economically accountable, i.e. stress vocational training.
- The share of the public sector, i.e. that of the taxpayers, in the costs of education has to be lessened and shouldered more by those who benefit from it (the participants and their employers).
- The government wishes to withdraw from direct control and transfer responsibility to the local level (decentralization).
- Increased individualism becomes the basis of planning and supply, i.e. the needs for education of the indivual have to be satisfied. Therefore, client-orientation is the key word in planning education and in evaluating its results.
- Educational demands become very fragmented, frequently making part of relatively narrow areas of demand.
- Education is compared to an investment: it should be possible to define, preferably calculate its effectiveness and costs.

According to Clark (1993) the powers controlling the education system and its development may be divided up into three distinct categories:

- state authority/control
- professional authority/control
- market authority/control.

In its severest form this authority/control may also involve sanctions. In its milder form it represents recommendations or political and labour market pressures for change. Clark (1983) has depicted the control system of the institutions of higher education as a triangle, whose corners each represents one of the above channelling powers. A similar frame of reference may also be applied to educational system more generally.

The role of the state in channelling education has over the past few decades changed over from a strict centrally led system to a decentralized model of development, where the regional and local levels are given more power of decision and responsibility than before.

In conformity with practice in the other Nordic countries, the educational system of Finland has been under a very strict state control, also from an international point of view. Characteristic forms of political state control are school legislation and local level decisions. Earlier on, every form of activity together with the supervision and control of the use of appropriations of the educational organizations in Finland were governed by statutes and strict rules and regulations.

Under the new engagement strategy, the reaction to the impulses for change confronted by the education systems has been left to the local level authorities and the schools themselves, the power of decision in matters of educational policy has been geared to the local level, and the system of financing education has been remodelled. In this new system also the goals of adult education are determined by the actual demand for education (Rivera, 1983). In the steering of schools the notion of client-orientation is being stressed.

The direction of the change in the channelling of the Finnish system of education is shown by the arrow in Figure 1 reflecting the ideas put forward by Clark (1983): a strong state control is being superseded by professional and labour market control. To the triangle should be added the municipal factor, which tends to even out the influence of the labour market and the professions and affects educational activities in Finland.

The disengagement of the government from direct control of adult education is clearly visible in the decisions in principle made by the Council of State in 1987 and 1988 concerning the principles for planning and developing the financing of adult education. The core content of these decisions was that the vocational course centres for adults financed by the National Board of Education be converted into adult vocational education centres that were obliged to procure the main part of their income by selling educational services to the authorities, business enterprises and private citizens, viz. by making

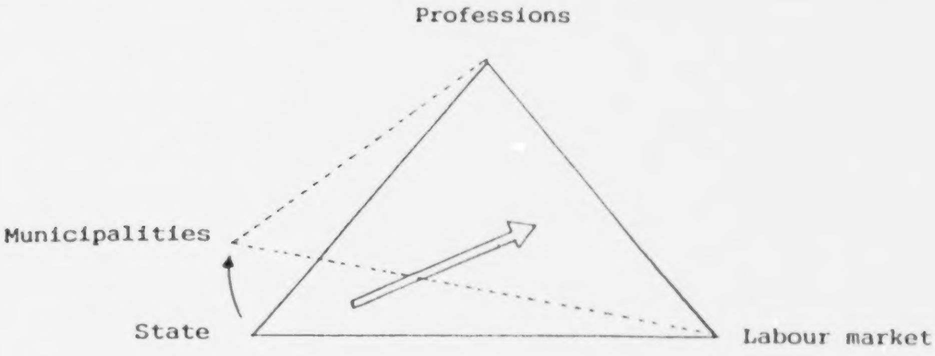

Figure 1. *The Direction of the Change in Finnish Educational System*

their future dependent on the demand of the market (Valtioneuvosto, 1987, 1988).

As a result of these decisions in principle and subsequent legislation the adult education centres that formerly were under a very strict supervision of the state have developed into independent institutions capable of managing their operations and economy themselves. Part of them have been turned into limited companied. The adult education centres at present are responsible for their activities mainly to their owners. The role of the National Board of Education in the steering of the centres is minimal, as this function, in the main, has been shouldered by the market and the education centres themselves. The current disengagement strategy, however, is not free of inconsistencies, as the biggest customers of the centres today are the labour administration and the county administrative boards.

The market forces influence the channelling not only of the adult education centres but that of the home economics extension organizations, the folk high schools, the civic and workers' institutes, the educational organizations, and the study centres as well. As the appropriations from the state have diminished, these institutions have been forced to increase considerably the share of the financing that can be obtained from the market. By becoming business enterprises and pricing their previously free offered products, their educational services, they have been able to keep their service volume intact despite the fact that they have had to compete for students with other organizations offering similar services. They are also frequently forced into competitive bidding by their own support organizations for arranging services that up till only recently have inherently been theirs.

Appropriations to the adult education centres in the 1990s are based on educational performance and a ceiling has been set to the amounts that actually may be paid.

The professional control of the education system is best seen in vocational training, where the qualifications set by the individual professions and the labour market largely dictate the content of the educational programmes offered. In the activities of the home economics extension organizations the professional control is seen in the fact that the objectives and content to a large extent are formulated according to the wishes of the home economics and handicraft teachers working in these organizations. Professional control within the cultural organizations is evident from the fact that they have been able to maintain their inner autonomy and as a result also to define their cultural objectives.

The increasing management by result prevalent in Finnish administration at present helps support the disengagement strategy of the government. The course right now is towards a situation, where the state confirms certain operational objectives and the result areas for the various sectors of the adult education system. This is done very largely on the basis of the views put forward by the organizations themselves. The means of implementing these objectives, however, are left entirely to the organizations.

An illustration of this is the relation in matters of control that prevails between the Ministry of Education and the home economics extension organizations. This control is changing. In order to receive appropriation funds for the coming year the organizations have to present a plan of their proposed result areas, their key results and result goals in conformity with the principles and language of management by results. Furthermore, they specify, on a general level, how the attainment of the set goals may be evaluated. The Ministry of Education then grants the necessary means to the organizations, making reference to or including the applications or parts of them into its decision. No result agreement proper, however, is made at this juncture.

MANAGEMENT AND EVALUATION IN THE NEW ACTIVITY PATTERNS OF THE ADULT EDUCATION ORGANIZATIONS

As the development of adult education in Finland moves away from a model of centralized management towards a decentralized model, where the various professions and crafts and the market play the leading roles, there has arisen a need to develop the modes of activity of the adult education institutions and organizations away from a situation, where they are the mere implementers of education and monitors of costs. Activity patterns are needed, where the educational institutions and organizations operate economically in clearly defined result areas and according to preset objectives, evaluating and analysing results. Such activity patterns put great demands on the management and organization of the individual educational institutions.

When state authorities were still firmly at the helm of developing adult education, the main stress in the cycle planning - decision-making - implementation - evaluation was on planning. Now that the state authorities, in the main, have withdrawn from control and the steering of activities is in the hands of the professions and the market, i.e. the customers, and, to a certain extent, the municipalities, emphasis has shifted to implementation (af Ursin, 1994). In the wake of this development the quality of education and the means of administrating and steering have become important objects of concern.

As the government withdraws from the direct control of education, the need remains for state authorities to monitor what happens in education and to evaluate whether or no the set objectives have been achieved, or in other words, how well the taxpayers' money has been spent. The authorities have a democratic right and duty to look after the interest of the citizens, i.e. to evaluate how successful the educational system has been.

The success of education is considered to consist of three factors: efficiency, effectiveness, and economy (Jakku-Sihvonen, 1992a,b). Education has been successful when through efficient and economic work the objectives have been achieved in a way that meets the demands of environment, society, working life, national culture and personal needs of the individual at any given time.

In the evaluation done by the National Board of Education emphasis in the immediate future will be on the assessment of implementation and structures. In step with the development of more long-range systems of assessment, emphasis will shift towards criterion-referenced evaluation, a method that is commonly employed for instance in most international OECD projects.

With regard to the angle of approach, when evaluating instructional organization, there are two additional mutually very different and dissimilar practices of evaluation. One is the mode of evaluation based on the tradition of Effective Organisation. Peculiar to this approach is that it endeavours to produce external standards or criteria essential to the evaluation of a school and its comparison with other similar schools.

The second approach is evaluation based on the tradition of Development Planning. Here the purpose of evaluation (self-evaluation) is the express servicing of the school's own aspirations.

A well implemented system of developing and evaluating activities facilitates the creation of a distinctive image for the school, the definition of the main objectives of activities and the criteria for evaluating the attainment of the set objectives, the definition of other areas of evaluation and of the indicators and evaluation criteria needed to describe them. In this way the evaluation of the successfulness of activities is possible, becoming a natural part of work in the school.

The stakeholders in the adult education organizations and their goals are very different from one another. Their goals are not necessarily even commensurable or even capable of being presented together in the same system of co-ordinates. For the analysis of these goals a multidimensional extension of objectives is required, where each stakeholder has to find his own point of view that makes it possible to set the objectives of the individual adult education organization.

The external evaluation of the education system and the appropriate analysis and presentation of the results that have been obtained are essential elements of the strategy of steering by information in the government's disengagement tactics for furthering decentralization. The presentation of evaluation findings in the right way and in the right place is a means of influencing the development of the education system. By means of such findings the politicians can see whether or no the set objectives have been attained and what the condition at any given time of the Finnish education system or parts of it is compared to that of other industrialized countries. Also the municipalities responsible for the educational institutions as well as other school owners and sponsors, and the educational institutions themselves, when analysing external evaluation findings, may discover warning or development-prompting signals.

A PROJECT FOR DEVELOPING MANAGEMENT BY OBJECTIVES IN FINNISH ADULT EDUCATION ORGANIZATIONS

As a result of the big overhaul of educational administration in Finland, the centenarian National Board of General Education and the twenty-year-old National Board of Vocational Education were fused into a National Board of Education. The new government agency started operations on April 1, 1991. The evaluation of education was specified as one of the new agency's target areas. With this in mind, a strategy for evaluating the results of adult education was planned. The objective was to evolve methods for the external evaluation of the successfulness of adult education with a view to being able to communicate to Finnish politicians, at any given time, the state of Finnish adult education. It was soon discovered, however, that what was needed, in addition to evolving methods for the external evaluation of our adult educational institutions and organizations, was the build-up of methods for the evaluation of individual achievement, i.e. methods of self-evaluation.

For the development of self-evaluation methods the department of adult education of the National Board of Education (NBE) in 1992 and 1993 decided to launch separate development projects with five different forms of adult education. The projects involved

① The arts and crafts organizations and the home economics extension organizations

② The vocational education centres for adults

③ The folk high schools

④ The adult education centres (civic and workers' institutes)

⑤ The study centres and the cultural organizations.

All projects were termed self-evaluation projects, but, concurrently with evolving a system of self-evaluation, their main objective was to develop the management of adult education organizations and institutions with a view to altering their mode of activity. The aim of the five projects was to pilot the adult education organizations and institutions toward activity patterns, where they themselves would set their operational goals, run their activities, and evaluate their results by means of a self-evaluation system based on the follow-up of the efficiency, economy, and effectiveness of operations.

An additional goal was to look into the possibilities of the adult education organizations' and institutions' concluding results agreements with the National Board of Education involving an open and transparent setting-up of institutional objectives and a management by results based on a well documented self-evaluation of high standard. This action model would provide the state authorities with a more discreet mode than heretofore of monitoring the activities of the schools and their use of appropriations, concurrently with supporting their own development and that of the adult education system as a whole.

IMPLEMENTATION OF THE PROJECTS

The course of the project has been planned in the following way. Preliminary to the actual project, a source list of literature is made, dealing with the results elsewhere in the field of adult education and the objectives necessary to ensure successful operations, after which the first phase of appointing the individual work teams for developing the management and self-evaluation of each form of adult education will be initiated. Each team makes a situation analysis of its individual forms of adult education, specifying the main areas of evaluation and the criteria to be used in the assessment. The next phase is to test in practice the evaluation models proposed by the teams in a few randomly chosen institutions and organizations. In the third phase, provided the models work, their use is extended to include all the organizations concerned.

The preliminary work was carried out successfully. An information retrieval service, containing important reference data was made over the objectives and successfulness of adult education (Lehtinen, 1993). Further, a survey of all the available material on the objectives of adult education was made (Hölttä, 1993).

Working Parties

In the first phase of the project a working party of its own was set up for each of the five different adult education organizations. Their task was to develop management in a way that it would lend support to the evaluation of educational results and the development of different ways of evaluation. Each team was expected to concentrate on developing self-evaluation methods for its own educational organization form only. They were not expected to develop methods or criteria for external evaluation.

The main task of the teams was to analyse, work up and select the expectations and objectives of their organizations in way that they, at given intervals, could be converted into result goals capable of being evaluated. The goal was further to update the raison d'être of each of the very long ago established forms of adult education together with their individual purposes and result areas. A subsidiary task was to reflect how the objectives and the results obtained by the educational institution or organization could be evaluated and what criteria and measuring methods could be exploited.

The findings of the working parties have be published by the National Board of Education in its own reference publications series: (Opetushallitus 1993a-e; 1994a-b).

Findings of the Working Parties

The work of the teams has been both difficult and time-consuming. The goals set were too demanding, considering the time given, and they were never reached. Each team nonetheless succeeded in analysing the raison d'être and in defining the main tasks of its own organization and in drafting an action model for self-evaluation.

The home economics extension work team was successful in defining the basis for its raison d'être as well as its main stakeholders and tasks, and in naming the result areas of each organization. For their model of evaluation the team selected a mode of action, where each home economic extension organization stakes out its own result areas and picks out the criteria for evaluating achievements. The regional branches of each organization then select, out of the general result areas, the activity sectors most suited to their own needs, also defining their result objectives and the criteria for evaluating the attainment of the set objectives.

The folk high school work team successfully expounded the essence and tasks of the folk high school in adult education. Three different modes of action were found for the evaluation of the schools' achievements. One was the evaluation made by the students and named **Project** by the team. Here the students from a personal point of view each evaluated the substance of the courses taken and the standard of their skills at the outset and the end of the course, also setting up personal goals for their participation. At the end of the course the students evaluated their achievements relative to the objectives they had set.

Another mode was called **Process** by the team. In it various questionnaires were used to elicit from the students and the personnel their views on

- the process of learning,
- the attainment of set objectives,
- the prerequisites of operational success,
- the customer service,
- the cooperation, and
- the economy of the folk high school.

The questionnaires were based on a Dynamic Concept Analysis. The work also helped create a data processing programme, making possible the handling and illustration by examples of the results of the questionnaires.

The last of the three modes was termed **Stories** and involved narratives written by former graduates on the time spent at the school and their subsequent experiences in life. These narratives, it was hoped, would help elucidate how students had benefitted from their studies and what effects, if any, the school had had on their later lives.

The adult education centres work team analysed the position and task of the civic and workers' institutes, specifying the values of adult ecucation centre activities and their task concept. The team also defined the main indicators of success for the three result areas - efficiency, economy and effectiveness (achievement) - by which the activity of the centres could be evaluated. The team also proposed a model for an evaluation form to be filled in by the centres.

The cultural organizations and study centres work team specified their result areas and the main content of the education imparted by them. The team was of the opinion that each cultural organization define their own result areas, using the work team's recommendations as a starting point and organize most of their activities as projects. After this it should be possible to set up the objectives for the activity and evaluate how well the set goals have been reached.

The adult vocational education centres work team saw as a central condition for a successful self-evaluation that cooperation with the stakeholders is systematized and that a continuous dialogue between the parties is established. Cooperation moreover has to be active, meaning that the role played by the stakeholders has to be that of the leading actor and not that of a passive audience. According to Patton (1982), stakeholders are people who have a stake in how well evaluation turns out. An important prerequisite of a successful dialogue is that a common language is found between the representatives of the adult vocational education centres and the stakeholders, making possible the communication of the expectations of the stakeholders and the criteria by which the fulfilment of these expectations are to be assessed. In this way it also becomes possible to convert the expectations of the stakeholders into such operational objectives, that, for all practical purposes, can be evaluated.

Experimental Implementation of Findings

In the second phase of the project, the practical implementation of the evaluation models produced by the work teams, financing was obtained only for the home economics extension organizations, the folk high schools, and the adult education centres (civic and workers' institutes). Experiments were launched in a total of 25 folk high schools, adult education centres and regional branches of the home economics extension organizations. The experiments were supported and monitored by a specially appointed consultant. The experiment in each case lasted for approximately one year. Each unit reported on the results of the experiment directly to the National Board of Education using a standardized report form.

In the experiment conducted by the home economics extension organizations the main emphasis was on defining the result objectives of the regional development projects and how to evaluate the results that have been obtained. The work phases comprised factors like present day analysis, a critical survey of the differences between the situation today and an ideal state of things, identifying goal expectations, selecting and developing evaluation methods and criteria, assembling evaluation data, evaluating the outcome of the project, and drawing the necessaary conclusions. The most difficult task was to construct precise objectives for the project and criteria for evaluating the obtained results. A problem from the start was the differentiation between objectives and means. With the aid of the consultant, progress was made and all the organizations concerned were able to set up their goals and develop at least some criteria for the evaluation of success (Lehtinen, 1994).

The folk high schools tested a multi-part questionnaire, developed by the work team for the evaluation of their educational services and processes. The experiment revealed that the questionnaire needs to be developed further; it ought to have a specific section, dealing with the needs of the each particular school only, and another separate version for reporting back on short-term courses. Also the programme for processing the replies has to be updated and made easier to use. Evaluation is well under way in the majority of the folk high schools, albeit the methods used have to be developed further and systematized.

The adult education centres project was aimed at setting up activity patterns, making clear the operational goals of the centres and defining the general objectives of education and of individual subjects, thus facilitating self-evaluation by the teachers and students. The definition of objectives and the commitment of students to them was made at the outset of each course. During the courses and at the end of them an evaluation was made of how well the set objectives have been attained. This was done by means of student-teacher dialogues and questionnaires.

Visits by the consultant helped initiate regular evaluation in all test schools. The change of the activity patterns that occurred in the course of the test year was, of necessity, different in different schools. In the most active of the schools, a systematized and goal-oriented evaluation method developed, involving students and teachers alike. The schools that had made less overall progress complained about the excessive workload and difficulty of getting part-time teachers show real commitment to the project.

After the completion of the experiment involving the home economics extension organizations, an interview was made with the personnel, concerning how well the change of the mode of activity advocated the the National Board of Education had been received by the parties concerned. The interview was held with the personnel of both the regional and the national organizations.

In the third phase of the project there will be negotiations with the participating adult education organizations on how to continue the project and how the difficulties met with so far may be removed and a standard self-evaluation method included into the regular repertoire of the organizations' activities.

THE RESULTS OF THE DEVELOPMENT PROJECT

The Diversity of the Adult Education Organizations

As the project advanced, an assumption made at the start was verified. It became evident that the history, points of departure and educational tasks of the participating adult education organizations and groups of educational institutions were so different from one another that each organization would need a process of its own, backed up by its stakeholders and defining the organizations' visions, current raison d'être, main strategies and result areas. There was no tenable way in sight of finding a common method of evaluating the achievements of the individual adult education organizations and educational institutions.

It became equally evident that each adult education organization and group of educational institutions for the evaluation of its achievements needed to enter into a dialogue with its stakeholders, where they jointly would establish how the organization (type of educational institution) is to satisfy or meet the expectations and hopes of its stakeholders and clients. For this dialogue a model of cooperation to suit all cases and using a common evalution code must be found. Only then will it be possible to transform the hopes and expectations of the stakeholders and customers into goals that will steer the activities of the organizations and educational institutions and simultaneously develop the criteria for evaluating educational results in the way that the parties concerned have agreed upon and can comprehend. By means of criteria that have been generated in this way it will be possible unanimously to argue how successfully the organization has operated and been able to satisfy the needs and expectations of its customers and other stakeholders.

As a result of their history and established mode of action and the earlier steering by the authorities, each adult education organization and group of educational institutions has assumed certain activity patterns and traditions that in them contain taboos and even blind spots. These are the activities that they continue to invest in and doubtlessly do well, but that time irrevocably has passed by. Also the organizations do not always concede or recognize the pure instrumental value of given activities, nor are they always able to differentiate between goals and the means of reaching them. Cases in point are the grants to the study centres and for the organization of various courses. Through the systematic work of a carefully selected work team it will be possible to tackle these problems as well.

The project showed that it is possible to analyse the raison d'être of each educational organization (group of educational institutions), verbalize its visions, make clear its strategies and chief result areas. It is also possible to interpret in what way and by what criteria the state of the organization and its achievements may be evaluated.

The project also gave added faith in the belief that the regional and local sections (school, branch) of each adult education organization will be able, using the findings of the national work team, to develop for themselves objectives and evaluation criteria that suit their needs and the needs of the communities in which they are located. Success in this, however, requires that cooperation is successsful also with the local stakeholders and customers and that a common model of action and code of evaluation is found.

Problems Attached to a Centrally Run Project

In a centrally run project like this, where new activity patterns for the adult education organizations are being developed by national work teams, the new models proposed by the team ought to be tested beforehand in some result unit, before they are put in more widespread use. This test phase should be vigourously supported by means of both training arrangements and consultation. During the experiment the project and its objectives should be forcefully brought to the fore in order that the participants fully comprehend the meaning of the experiment and how the change of the mode of activity that is striven for will benefit them also personally. Only then will they be fully committed to the experiment.

From the viewpoint of the project's progress it is essential that goal-oriented proceedings and steps for developing evaluation methods are initiated on all levels of the participating organizations. The process is twopartite. One part is concerned with ensuring that it will possible to verbalize the content of the new mode of activity and of action to be employed as well as making clear what this will mean in practice for the future work of the organization. A similar change has to be confirmed for any local needs. The other equally important part of the process is to make sure that the organization's personnel will be able to learn, internalize and accept this new mode of activity and is prepared to join in the venture.

It is of key importance that the personnel is made to join and to take part in the training toward new modes of activity, especially from the viewpoint of successfully reaching the set goals. Although everyone knows that the development of the organizations is dependent on the creation of new educational contents and the training of the personnel to accept a new state of affairs, everyone is confused as how correctly to balance the two. The training that is done in this connection should include all employees at once. It should also be launched at an early stage of the project. Training and making people join will succeed best, if training and the development of educational content on all levels of the organization are coordinated in an intelligent way.

In the course of the project it became very clear that the objectives set would not be reached if the National Board of Education contented itself merely with having the model for a change of mode of activity proposed by it transferred to the main adult education organizations and the heads of some local branches or units of these organizations or to the school representatives of the organizational work teams. Nor would it suffice that visiting representatives of the NBE gave talks on the project and its objectives at training seminars and the like for local personnel. Instead, the representatives of the NBE ought systematically to have appeared at more or less all of the result units of the education organizations concerned. This would have facilitated the work of the management of the central organizations and the individual educational institutions a lot and lessened the resistance to change. On the other hand, the also limited activity of the NBE created pressures in the local adult education organizations, increasing the hopes they have invested in the central organization. The work of the consultant supervising the experiment was highly valued by all, though, in the opinion of some there could have been more of it.

A Key Question is Personnel Training

As a consequence of the insufficient stakes of the NBE, the leadership of the adult education organizations and the individual educational institutions were put in a somewhat awkward situation. They were expected to devote all their energies to supporting and furthering a change in their activity patterns, notwithstanding the fact that they could not always free sufficient resources for the promotion of this change. The reason was that part in their teaching personnel and of the leaders of the test schools were not members of the work teams from the outset of project and consequently did not take part in the learning process that they would be needing. As a result, quite a few of them were put in a position of personnel instructors at a time when they were themselves no better informed of the proposed elements of change than the students (personnel) they were supposed to teach.

The project also very clearly indicated that it is essential that the leaders of the branch organizations and the individual schools alike join in the implementation of the changes. The support of the management is imperative to effecting a change. If the management decides not to join, the reform becomes slow or even fails to materialize. An investigation that was made into the matter reveals that although the personnel of a local branch of a home economics extension organization had heard about the project and was devoting all its energies to the implementation of a change, with no outside aid, progress was slow and agonizing, because management had not internalized or interfered the matter in (Haavisto, 1994). When a big operational change is afoot, the previously chosen leaders of the branch organizations and individual educational institutions are easily hard up for ideas; they have been chosen according to criteria that no longer apply in the schools and local organizations where they work. A typical criterion of this kind is mastery of the bulk of the work in the organization or school. When activity patterns are changed, new qualificational dimensions are called for, like ability to be at the head of change and to pilot people through the change. The old leaders do not always possess these qualifications.

The implementation of a big devolpment project like this also clearly suggested that it is important that the objectives and main ideas are sufficiently documented and have been disseminated both orally and in writing to all schools and to all organizational levels. In this way it can be avoided that intentions are misinterpreted and seen as something that they are not. When there are false rumours and expectations abroad, the personnel will often shrink back from a proposed change and oppose it.

Adult Education Centres

The project showed that the tasks assumed by the adult education centres (civic and workers' institutes) may differ considerably, depending on in what part of the country the centre is situated. City institutes focus on offering their customers high-quality educational services such as

- supplementing vocational training needed on the job
- understanding art and cultural values
- developing the skills of the hand and other practical skills
- involvement in refreshing and positive experiences, whilst the tasks of the adult education centres in small localities and in remote corners of the country have been put down as
- advancement of social contacts, mental welfare, and health

- increased personal activity and spontaneity
- supporting the viability of the region with the means that are at the disposal of adult education and the institution in question.

The self-evaluation experiments included in the project helped the adult education centres to achieve their most important ambition: the concretization of their operational objectives and the demonstration of their effectiveness. The centres were provided with general and the courses with individual objectives of their own. The drawing of the attention to the evaluation of the school's own activities improved the goal-orientation of instruction as well.

The project also helped improve the image and status of the centres. Also the teachers are now better motivated and the goal-awareness of instruction and study among the participants has risen. A big help in achieving this was making the students from the very start pledge to commit themselves to jointly proposed and accepted objectives.

Folk High Schools

In the reports on the experiment handed in by the folk high schools, the models that had been developed were considered to be very operational as they were. Yet some schools considered them to be too complex. In some folk high schools the data processing that the evaluation method named Process employed by some schools proved to be a spesicif problem. What was thought of as being highly beneficial was the fact that the management by means of the evaluation method were able to create an activity model, making possible the neutral addressing of also very tricky instructional questions. Also evaluation has helped to find acceptable solutions to the hitherto very difficult question of making the personnel realize the importance of observing a stricter economy.

Home Economics Extension Organizations

The home ecomics extension organizations in their reports assert that a sharper edge has been put on their activities in the course of the project. Earlier on, the home economics extension organizations had been working in many important fields, inordinately scattering their restricted resourses. The new project made the central organizations focus their attention on only a few preselected result areas. This in turn made the local organizations focus their resourses as well on jointly accepted and locally adapted and "shapened" result areas. As the project progressed, insight was gained into how to project activities, set the objectives for schemes that had already been launched, and to define the criteria for evaluating the obtained results. The importance of documentation soon became very plain. Evaluating a project after its completion proved very difficult, unless the objectives and criteria had been noted down very clearly and unequivocally beforehand (Haavisto, 1994).

The home economics extension organizations have now moved on to a situation, where each organization makes a contract similar to a result agreement with the Ministry of Education, promising to perform certain tasks over the next 1-3 years or to focus its activities on given preselected result areas. The local organizations in turn make result agreements with their respective central organizations. This arrangement, however, at least for the time being, makes the allocation of appropriations to the local organizations by the central organizations somewhat problematic.

Cultural Organizations and Study Circle Centres

As the project progressed the ideology behind the cultural organizations and the study circle centres that they maintain received a whole new significance. In the 1980s the ideologies of the cultural organizations had badly deteriorated and few organizations any longer cared to speak up for their ideals. Instead they endeavoured to be general adult educators, in the general school system. By and by akin to, it became evident, however, that the pluralism of adult education that the government had wished for lay in the acceptance by each organization of its own ideology and in making possible for its customers to form groups of kindred spirits within that same ideology. For this very reason, it is justifiable that Finland has 11 different study centres distributing appropriation funds to background organizations and study circles of their own. The project helped the study circle centres state their chief result areas and the criteria by which they will be able to evaluate the outcome of their activities.

Adult Vocational Training Centres

The adult vocational education centres, in the course of the project, came to the realization that for the setting up of objectives and the evaluation of how well they have been attained, they will need a more advanced method than at present for unravelling the expectations and hopes of their chief stakeholders. As a solution to the problem they saw the appointment of an evaluation team founded on this very notion of educational stakeholders. The training centres themselves will appoint the members of the team. In this way there will emerge a work process involving both the stakeholders and the training centres, where gradually a code for setting up and evaluating objectives will unfold that all parties concerned are able to understand the same way.

THE FUTURE

The National Board of Education made the above related interventions to promote the changes in the mode of activity that were necessary in Finnish adult education (CVT = Continuing Vocational Training). The Board financed and organized working parties, published team reports and hired a consultant to support experiments. The implementation of the envisaged changes and the continuance of the projects launched by the different organizations and groups of educational institutions will henceforth be the responsibility of the adult education organizations themselves and the central organizations above them. In the future, the National Board of Education will be able to give its support only through sponsoring brief visits by a consultant and by arranging seminars dealing with new modes of action and activity patterns.

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FOUNDATIONS OF VOCATIONAL TEACHER EDUCATION CURRICULUM

Seppo Helakorpi

ABSTRACT

Vocational teacher education in Finland has developed very much during the last 10 years. Vocational teacher education has got many changes in content as well as in structure in relation to the total reform of vocational education. Until the year 1990 vocational teacher education has been described in many laws related to different trades. Now teacher education is based on a higher level vocational degree or diploma. Before entering teacher education a candidate must have at least two or three years of work experience in his or her own special field. At the early stages of the development, vocational teacher education took the academic subject teacher education as its model, so that its content of 40 study weeks is almost identical with the university subject teacher education. In the 1990s the special characteristics of vocational teacher education have increasingly been discussed as well as its theoretical and practical principles which have been reflected on the curricula. This article will view the situation of the curricula of vocational teacher education in Finland in general, and especially in the Vocational Teacher Education College of Hämeenlinna.

Descriptors: *vocational education, vocational teacher education, teaching characteristics, occupational characteristics, theoretical and practical knowledge.*

DEVELOPMENT PHASES

The teacher training of general education in Finland was reformed in the 1970s by discontinuing teacher's colleges and transferring training into universities. Vocational teacher education was not included in this reform. The reason for this was first of all the vocational sector's own will to keep the close contact to vocational education unchanged. On the other hand vocational teacher training was at that time scattered and heterogenous. There was no readiness for more radical reforms and no-one had discussed the basic principles of vocational teacher education.

The reform process of vocational teacher education has been related to the reform of vocational education which took place in the 1980s. This process is still going on. There are new experiments of the upper secondary level education going on, where general and vocational upper secondary schools have been related more closely to each other as well as to higher vocational education. The tertiary level vocational institutes are thought to give a new channel for higher education alternatively with universities.

Vocational teacher education has been developed very much in contents and in structure since the middle of the 1980s. Until 1985 vocational teacher training was carried out with different arrangements. Among other things the length of education varied from a few months to 3 years. Somewhere the training was based on vocational diploma and somewhere teacher training was given at the same time with vocational education. Since 1986 all vocational teacher education institutes have followed up the same programme which is based on 40 study weeks of pedagogical studies. Before entering vocational teacher education a candidate must have a higher level diploma or degree and 2-3 years of experience on his or her own special field.

With the development of the content there has also been the development of administration and legislation. The old legislation was renewed in 1990 when the law on vocational teacher education institutes was passed. Then the old teacher education colleges in Hämeenlinna and Jyväskylä were changed into Vocational Teacher Education Universities. Beside these the legislation confirmed the other teacher education institutes which are teacher training departments of different vocational institutes. The problem still remains concerning the number of institutes where vocational teacher education is carried out (19 units). Yearly the entering capacity of vocational teacher education is about 700.

At the moment the degrees of pedagogics are being discussed and in that context the position of vocational teacher education has been brought up. The goal is to reduce the number of institutes which carry out vocational teacher training possibly into two or three units. In this way it is hoped to make savings and also, by centralizing the resources, better possibilities for the development and research of vocational education. Now there are three different alternative suggestions (cf. Opetusministeriö, 1993 and Korkeakouluneuvosto, 1994): to centralize the present vocational teacher education into two existing independent vocational teacher education colleges in Hämeenlinna and Jyväskylä, to centralize training according to the previous suggestion and unite these units into universities, and the third alternative is to unite the present teacher education units into the new higher level vocational institutes which have their permission to experiment at the moment. Simplifying the first alternative emphasizes distinctiveness of vocational teacher education, the second alternative relations to pedagogical institutes and the third alternative relations to vocational education. Economical realities require that something has to happen during the next two years.

NATIONAL BASIS FOR VOCATIONAL TEACHER EDUCATION

The system of the curriculum includes three levels: the national basis of the curriculum, the curriculum of an institute and the curriculum of a student. The national basis of the vocational teacher education curriculum is determined by the National Board of Education. Closest to the practice is a curriculum prepared by the student him or herself.

The national basis for the vocational teacher education curriculum today was developed in 1991 (Opetushallitus, 1991). The curriculum is being reformed already according to the experiences gained thus far. Resource cuts for education, control of outcomes, rapid development in internationalization, changes in working life, new trends in the school policy (stress on the individual, optional and alternative subjects) and especially the new concepts of knowledge and learning, among other things, cause changes in emphases (see Figure 1).

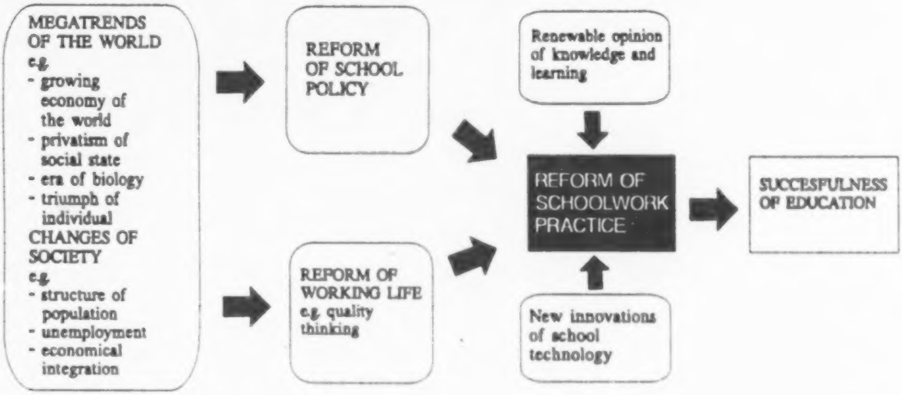
MEGATRENDS OF THE WORLD
e.g.
- growing economy of the world
- privatism of social state
- era of biology
- triumph of individual
CHANGES OF SOCIETY
e.g.
- structure of population
- unemployment
- economical integration
REFORM OF SCHOOL POLICY
REFORM OF WORKING LIFE e.g. quality thinking
Renewable opinion of knowledge and learning
REFORM OF SCHOOLWORK PRACTICE
New innovations of school technology
SUCCESFULNESS OF EDUCATION

***Figure 1.** Factors Affecting School Practices and the Success of Education (Ammatillinen opettajakorkeakoulu, 1994)*

The team discussing the reform of the national curriculum (Opetushallitus, 1993) see that vocational teacher education is an important instrument in the development of the teachers' work and the institute's activities.

The change of regulations which came into force early in 1995 also requires a reform of the national curriculum. The change of regulations makes it possible for vocational teacher training to give qualifications for jobs in adult institutes, in comprehensive schools and in senior secondary schools. This wide range of competence has to be taken into consideration in vocational teacher education.

According to Lyytinen (1994) the interpretation of the national curriculum in teacher training units may:

- activate and deepen curriculum-thinking by paving the way e.g. in discussion of the change of activity environment, of the value, of the opinion of learning and of the guiding of learning
- lead to the many-sided re-evaluation of present situation
- harmonize the internal and inter-curriculum thinking of the teacher education units; this, however, does not mean sameness
- promote a commitment to a reform of the curriculum
- create a dynamic "lifestyle" of a new and distinctive development of the curriculum, which cyclically begins and ends to self-evaluation.

A curriculum of a teacher training institution may, according to Lyytinen, act among other things:

- as an instrument of communication to students and to important interest groups of teacher education
- as a basis for internal and external evaluation of the success of teacher training
- as a promoter of the total effectiveness of training by integrating the curriculum-thinking; precondition then is its process-centered development and assurance of a commitment into it
- as a basic security assurance of work practices and planning in a teacher training institution
- as a provider of the total picture of the content of teacher training
- as an improvement of the objectivity and system of the work
- as criteria for educational resources
- as a guiding and backing instrument of a learning process for the students
- as a synergy and coordinator of abilities in a teacher training institution
- as a profile of a teacher's professionalism.

In the background of the new curriculum-thinking is an aim for an open learning environment which has characteristics as follows:

- Learning occurs in a learning workshop (cognitive workshop), which is the opposite of a "learning factory" - learning occurs in a context, which shows how knowledge and skills are used in everyday life - learning is comprehensive and to be experienced.
- New knowledge and skills are attained actively by problem solving and activity exercises (learning exercises) - learning is a process, the results of which are not examined only from the results.

- Learning is associative integration, in other words new knowledge is integrated into old knowledge by creative thinking and by critical speculation.
- Learning is both individual and team activities - ability to teamwork is an important part of learning activities.
- All available sources of information and equipments are used in learning (e.g. databases, electronic mail, teleinstruction).
(Ammatillinen opettajakorkeakoulu, 1994).

The learning view described above is called reforming learning instead of the old renewable learning. These two views of learning can briefly be compared as a foundation for teacher training as follows (Opetushallitus, 1993):

RENEWABLE LEARNING	REFORMING LEARNING
to be socialized into the present teaching practices	to produce new teaching practices
teaching to be based on ready-made theory, ready made models and methods	teaching based on problems in relation to practice, by reflecting onto theory, by developing new models and methods
teaching practice by listening to lessons and teaching	development of new pedagogical solutions (plans and teaching experiments)

The aim of the curriculum reform is also to create "new teaching", where in teachers' work, besides emphasizing the implementation of teaching and school work, there also is an emphasis that a teacher is a researcher and developer of his or her own work and a reformer of the whole school. The teacher is no longer working with his or her "class" but working more and more in close cooperation with the whole working society (Helakorpi, 1992).

According to the team that discussed the national basis of teacher training (Opetushallitus, 1993), the vocational school teacher's qualifications include:

① ability to develop actively his or her own teaching field by taking into consideration the changes in working life and occupations, and also the changes in other activity environment of education and educational policy,

② ability to understand the fundamental nature of learning and willingness and ability to guide learning of heterogenious students,

③ ability to assess the effectiveness of different kind of teaching arrangements and learning environments in learning and ability to act appropriately in different activity environment in the direction of objectives developed together, and

④ ability in cooperation and interaction both in immediate surroundings and internationally.

The dimensions of vocational development are related in all of these areas: teacher's personality, cognitive processes, and vocational and action readiness. The length of the vocational teacher education is still 40 study weeks. The objectives of the teacher education are directed from the above mentioned areas of qualification. E.g. the general objectives of the Vocational Teacher Education College of Hämeenlinna have been described in the latest curriculum as follows (Ammatillinen opettajakorkeakoulu, 1994):

> Vocational teacher education is based on the knowledge of society and working life and their development and on the understanding of the essential nature of pedagogy and education, learning and teaching on the basis of which, as the result of education, the student achieves a foundation for the teacher's competence which promotes a lifelong growth and ability to develop his or her teaching field and work society.

These overall aims are a foundation for defining the part objectives for learning units.

SPECIAL FEATURES OF VOCATIONAL TEACHER EDUCATION

Vocational Teaching

The central issue in the development of vocational teacher education is the definition of vocational teaching. According to our opinion the vocational teacher is an expert, whose know-how continuously develops and which is affected on the one hand by the changes of the working life and on the other hand by the changes of knowledge and learning opinions. Expertise is, first of all, based on the knowledge of the historical and social meaning of the trade, on the skill of the most important occupations and on the mastery of the most important skills as well as on the ability to learn these skills and on the knowledge which relates to the guidance of learning processes. The teacher's competence is based on the teacher's work which is mastered theoretically, to which, beside teaching, belong cooperation and development of his or her own work and the whole school community.

The vocational teacher is a guide of the learner's growth and vocational socialization. In the work expertise is emphasized as a guide to the learner's individual growth and ethical development. Because school as an organization differs from the traditional work societies in working life, the teacher's know-how and profound knowledge about social processes and their manifestations are particularly important. The vocational teacher as an expert can be described according to the above as follows (Figure 2):

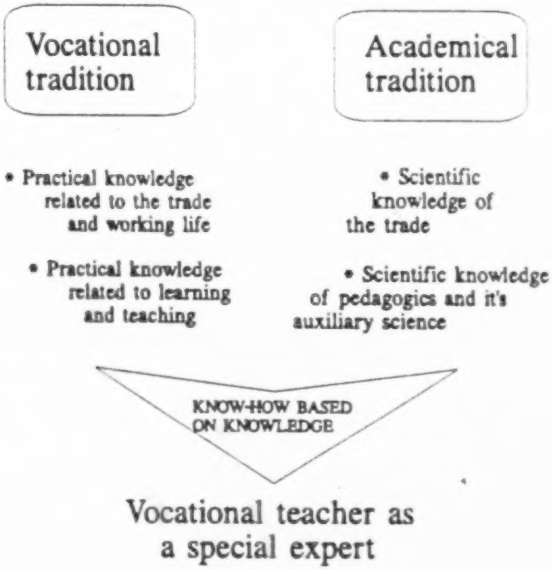
Vocational tradition
Academical tradition
• Practical knowledge related to the trade and working life
• Practical knowledge related to learning and teaching
• Scientific knowledge of the trade
• Scientific knowledge of pedagogics and it's auxiliary science
KNOW-HOW BASED ON KNOWLEDGE
Vocational teacher as a special expert

Figure 2. *Vocational Teacher as an Expert (Ammatillinen opettajakorkeakoulu, 1994)*

Scientific academic knowledge and, on the other hand, practical vocational knowledge are integrated in vocational teaching. From this follows that the vocational teacher has to have such knowledge and skills by which he or she acts as an expert emphasizing also the ethical side of practical rationality.

Practicality and functionality are integrated in the expertise, which can be called implementation know-how and, on the other hand, innovative and analytical creative know-how.

The vocational teacher's work as an expert includes strategical planning, directing processes and all activity which is related to these. It is a continuous dialogue between scientific knowledge and vocational practice on the level of thinking. Also social and ethical responsibility is always included in this reflection in the teacher's work. The role of the science in teacher education can be demonstrated by the following Figure 3 (Huttunen, 1990):

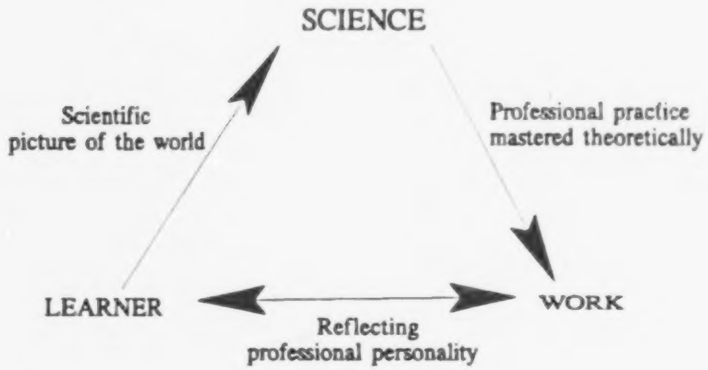
SCIENCE
Scientific picture of the world
Professional practice mastered theoretically
LEARNER
WORK
Reflecting professional personality

Figure 3. Science in Teacher Education

Järvinen (1987) has outlined the general aims of teacher education based on the above as follows:

Scientific picture of the world or **knowledge foundation of the action**:

- The student acquires some kind of a view about those branches of science which represent the subjects he or she teaches.
- The student acquires some kind of a view about pedagogy, especially about the theories which are related to learning, teaching and development of the affective area.
- The student understands the social scope of responsibility of his or her domain and understands that his or her professional activity reflects his or her own image of the human and the world.

Theoretically mastered professional practices or **skill foundation of the action**:

- The student masters the most important theories of didactics and can also apply those into practice. It is understood in this context that didactics covers both general and specific areas and also the contents and the methods.
- The student is able to plan and organize his or her own work and his or her student's work, teamwork with his or her students, with colleagues and with other people who are working in the school.

- The student is able to analyze interactive relations between the teacher and his or her students and between the students and develop communications especially during the studies.

Reflecting professional personality or **development foundation of action**:

- The student is able to analyze his or her own solutions, interactive processes and his or her working and to take responsibility of them, too.
- The student is able to investigate work with his or her students. Investigation in this context mainly stands for the activities similar to evaluation and development research which are meant to be a foundation of the development of his or her own work.
- The student is able to develop continually his or her own work as a teacher.

Based on what is said above about the definition of objectives, teacher education can be understood as a continuous process which begins from basic education and continues as a further and advanced training.

Starting from the traditional way to outline qualifications the professional skill of the vocational teacher can be described as follows (Figure 4):

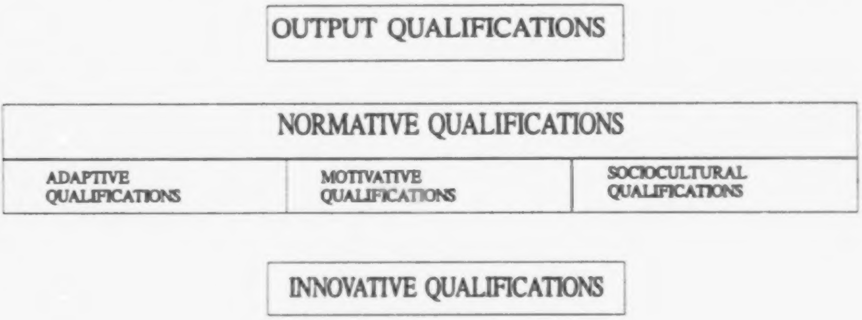
OUTPUT QUALIFICATIONS
NORMATIVE QUALIFICATIONS
ADAPTIVE QUALIFICATIONS
MOTIVATIVE QUALIFICATIONS
SOCIOCULTURAL QUALIFICATIONS
INNOVATIVE QUALIFICATIONS

Figure 4. *Professional Qualifications (Ollus et al., 1990)*

If the qualifications of the vocational teacher are outlined according to the above basic division, the following descriptions are for the different branches of qualifications:

a) Output qualifications

This branch in the vocational teacher's work means the teacher's basic abilities by which the teacher gets through practical teaching and guidance work. Besides the professional knowledge and skills and also the mastery of today's work reality the know-how related to guidance of learning is included in this, in other words, the direct pedagogical skills (planning, implementation and evaluation).

b) Normative qualifications
Normative qualifications in the teacher's profession are related to the teacher's characteristics, when adaptation to the working rules of the society of the institutions, "assertiveness", which relates to worktasks, to action principles, to habits and norms of the work society belong to **adaptative qualifications**.

Motivative qualifications mean more profound commitment to the teacher's work than adaptative qualifications, "vocation", willingness and initiative, profound understanding of vocational education and its social meaning and also experiencing this as a challenge.

Sociocultural qualifications are related to the relationship of the teacher and the school society. The teacher's interactive and cooperational abilities (e.g. language proficiency), empathy, loyalty to the external relation of the work society, ethical mastery of the work and ability to proportion different concerns belong to this.

c) Innovative qualifications
Innovative qualifications in the teacher's work are related to the development of work processes. It is based on the familiarity of his or her own educational field and on the social meaning of vocational education and historical development. Development applies, besides his or her own work, to the development of the whole school society. Readiness to develop includes also an ability to analyze, to synthetize and to do research work, to follow new knowledge of his or her own domain and pedagogics, ability for continuous learning and his or her own activity in the development work of the professional field.

Basic Factors of Vocational Teacher Education

In the Vocational Teacher Education University of Hämeenlinna discussions have been held in relation to the reform on the special features of vocational teacher education during the last few years. The result is that vocational teacher education is based on the following basic factors which at the same time are its development areas (Helakorpi, 1994):

1. In vocational teacher education the emphasis is on **PEDAGOGICAL** education. In the training pedagogical development should be followed and new pedagogical trends should be applied into vocational teaching. The teacher does not work any longer only with his or her "class" but he or she is more and more a tutor-type adviser working in the team and at the same time a developer of his or her own work and the whole school community.

2. The basis for vocational teacher education is **PROFESSIONALISM** which occurs in student selection, in the content organization of the training and in the evaluation. Professionalism is a red line, a core, on which pedagogical activities are organized. The idea of learning action is based on the demands of practice, in the work the knowledge and skills are not separate or isolated.

3. Vocational teacher education is **ADULT EDUCATION**, which should be indicated in the arrangements and settings of the training, and especially so that the whole school process is based on the active role of the student. Nowadays teacher education has been developed to be implemented also as distance education. This is an interesting alternative, in which the measures of developing work-study can be applied and training can be based on the idea of the development of the teacher and the institute.

4. Vocational teacher education is **UNIVERSITY-LEVEL** education, which means high level expert trainers, research and development work and continuous follow-up and quality verification of the education. The theoretical basis of vocational teacher education is multidisciplinary. It is based on the classical concept of knowledge, first of all on the practical concept of knowledge, in which experience has an important role. Vocational teacher education colleges are already big enough to form a "critical mass" which is required from a science society.

5. Vocational teacher education is based on the principle of **CONTINUOUS EDUCATION**, which requires that teachers' basic and further education form a whole whose objectives are based on the needs of teachers and institutes. In cooperation with the universities advanced education can be organized in the form of open university. This advanced education should be based on teachers' basic education so that the previous education is considered for the benefit of the students.

6. Vocational teacher education is **COMPREHENSIVE** by nature. Research and development, service activity and consultations play an important role in teacher education.

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Part Three

THE PEDAGOGICAL REFORM OF OCCUPATIONAL EDUCATION

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THE PEDAGOGICAL REFORM OF OCCUPATIONAL EDUCATION

The previous section gave a description of the structural reform of occupational education. The aim of Part Three is to explore the pedagogical reform of occupational education. Traditionally, one of the main roles of school was to prepare students for society by giving them the requisite functional abilities. Vocational education was among other things expected to disseminate information and to produce widely knowledgeable professionals, despite the fact that school has long ago lost its monopoly as the provider of information and the producer of learning experiences. Now occupational education is facing the challenge of renewing its instructional methods.

The main principle governing the curricular reform is reducing central control and increasing the independent responsibility and decision-making power of the educational institutions themselves. As evaluation is a crucial part of the learning process, it is also important to improve the philosophy and methods of evaluation in accordance with current ideas on and concepts of learning and knowledge. The Finnish system of evaluating vocational education and training was altered in the middle of the 1980s. A new trend, responsive student evaluation, arose, focusing on the assessment of the quality and individuality of learning.

Helena Leino-Kilpi and Anu Räisänen outline the improvement of vocational teaching, learning and student evaluation from the viewpoint of health care education. Special attention is given to exploring the findings of research done on the emergence of students' competence and vocational skills. *Johanna Lasonen* examines the extent to which student self-assessment is actually implemented, the criteria used by students in self-assessment, and their expectations concerning the assessment reform. *Annikki Mikkonen and Jukka Määttä* describe the model of the experimental Finnish polytechnic and the findings of a longitudinal study of the associated developments in curriculum planning work and teaching methods.

Jorma Ekola's article describes some of the challenges of Finnish vocational teacher education. In vocational teacher education, curriculum development and much of actual educational practice are based on how the central issues of the time are seen and interpreted. *Ulla Mutka and Hannele Rousi*, too, consider the new features of vocational teacher education. Their viewpoint is that the current societal changes have a direct impact on vocational teacher education and that they can be seen in three distinct phases of curriculum thinking. *Harri Keurulainen* points out some central ideas of competency-based examinations as used in evaluating vocational teacher qualifications.

The next two articles consider the application of educational technology to vocational education. First *Peppi Taalas* presents the results of a survey carried out at Finnish vocational schools and commercial colleges concerning the use of computers. The ongoing changes in working life and the curricula require new methods of learning. Computers and the new information technology can contribute to learning in modern society. Second, *Matti Suonperä* describes in his article education through telecommunications.

PEDAGOGICAL APPROACHES TO VOCATIONAL TRAINING

Helena Leino-Kilpi - Anu Räisänen

ABSTRACT

The article is an outline of the development of vocational education and training and student evaluation in Finland. It relates the development of vocational education from the viewpoint of one particular field of training - health care education. Special attention is given to the utilization of research findings when learning a trade and to the development of the students' own evaluation skills. The presentation reflects the experiences and findings of a research project in health care training carried out in 1987 - 1990 on developing evaluation methods in education. Central points of departure within this new system of vocational education and training are student-centered study methods and a dynamic concept of learning, knowledge and professional skill. The innovation tangibly increases the students' options. Its aim is to support sustainable development and internationalization. Beyond this, the reform will introduce modular curricula, student-centered modes of action and network cooperation. An area of special emphasis is the development of a relations network with the labour market. Students in medical-surgical and in public health nursing together with their teachers have engaged in the project. The experiment has focussed on the integration of theoretical subjects into practical ones, the promotion of self-evaluation and the student's perception of set objectives along with an effective utilization of research findings. Self-evaluation skills were developed by means of journals. The experiment was also an attempt to define the qualitative features of educational results and the principles of their evaluation.

Descriptors: *vocational instruction, teaching, student evaluation, quality of learning*

INTRODUCTION

There is a need for pedagogical development in vocational training due, among other things, to the changing concepts of learning and knowledge and of what really constitutes vocational skill. From the point of view of curricula and a new instruction and evaluation culture, issues like what structures of knowledge underlie core functions in each vocational field, how these functions are acquired (learning and thought processes) and by what learning and evaluation strategies and methods the unfolding of the learning process, the motivation of the students and durable learning results can best be promoted, have become very central (Olkinuora, 1992; Lappalainen, Kaukiainen & Vauras, 1993).

The changing concepts of what constitutes learning, knowledge, work and profession have reinforced the need for developing vocational education and educational evaluation in Finland. A change is needed stressing the capacity for subjectivity, independence, creativity, and critical assessment of the learner, the full use of his personality and social aptitudes. Self-reliance and a clear self-image form the basis of the durable learing results that are aimed at.

Beside a solid foundation of knowledge-skills, the durable learning results characterizing of professional competence include qualities such as creative problem solving capabilities, correct study techniques and the skills essential to evaluating one's personal actions and way of reasoning (reflection) (meta-assessment), and - the power of social and cooperative interaction (Ropo, 1992; Räisänen, 1993; Räisänen & Frisk, 1994).

The knowledge conducive to professional competence is not the same as merely reproducing what has been gleaned from books; it demands the skill, knack if you wish, of generating new knowledge. This new knowledge is fostered in functional, genuine environments by means of personal observations, experiences and innovative reasoning. In view of the rapidly changing reality around us, the capacity for learning and evaluation, a positive attitude to and a firm motivation for learning together with genuine commitment constitute the most essential qualities of professional competence. Self-initiative calls for preset personal goals and the exploitation of personal experiences.

In this article the main outlines of the development of vocational education and evaluation are discussed. The emphasis is on describing current trends. At the end of the article developments in one particular field of vocational education - health care - are dicussed in more detail. Special attention is given to the exploitation of the findings of the research done into the development of the students' professional competence and evaluational skills. The paper mainly, follows a research project on developing evaluation methods in education carried out in 1987-1990.

A DYNAMIC CONCEPT OF VOCATIONAL SKILL, KNOWLEDGE AND LEARNING

The traditional concept of **professional skill** may be described as the totality of the work tasks involved and the qualities necessary for mastering these skills (Vuorinen, 1988). This concept has been replaced by a concept stressing qualities like systemization, holism, the continued change of activities and the dynamics involved in the process. Vocational skill accordingly means capability to act flexibly in changing situations and to analyse one's own actions and to commit oneself (Eskola, 1991). The continued integration of knowledge with skill and the generation of knowledge from the activity itself by means of reflection are qualities describing professional skill (the dynamic concept of knowledge) (Schön, 1987). Described in this way the concept of professional skill and professional knowledge appear goal-directed and process-like.

From time to time there is a conflict when integrating the objectives of vocational education with those of working life. The conflict arises mostly from whether or no vocational training should satisfy the current objectives of working life or rather strive to attain objectives that lie beyond any up-to-date goals. The first alternative favours the acquisition of often very static work procedures, whereas the second puts stress on turning a critical innovative way of reasoning and general vocational skills into professional competence.

The development of **vocational teaching** in Finland in the 1970s was ruled by a strongly behavioristic concept of learning intent on emphasizing the quantitative features and superficial qualities of the process and a way of reasoning that accentuated educational (teaching) techniques (Lahdes, 1991). As a more cognitive concept of learning took the place of the old way of reasoning based on educational techniques, the process character of vocational skill and how it is acquired was enhanced.

The influence of a cognitive concept of learning is still making itself felt in vocational training, even though a contextual shift in the concept occurred in the 1990s (Miettinen, 1993). As a result of this shift attention was drawn, among other things, to the action milieu (situationalism) and to social interaction. The transfer effect of learning according to situationalism is the greater the closer the proximity between the place of learning and the place of applying the skills (cf. work place). From the viewpoint of social interaction learning takes place in a social environment, the important thing being that there is cognitive processing and a sufficient level of comprehension within the group. Learning is the result of the interaction between the teachers and the students and between the students themselves (Ropo, 1992; Kauppi, 1993).

The contextual shift entailed a transposition of the point of gravity toward a more constructive concept of learning (Lappalainen, Kaukiainen & Vauras 1993, von Wright, 1992). As a result of the shift, attention was called to such features of learning as are consistent with the concepts stressing experience (Kolb, 1984), social behaviour (Bruner & Haste, 1987) and reflectivity (Schön, 1987; Mezirow, 1990; Järvinen, 1990). Vocational teaching in Finland has also been influenced by activity theoretical reasoning and activity models (e.g. Engeström, 1992; Miettinen, 1993).

The ideal conception of vocational instruction and established practices are not up-to-date equivalents in all respects. Any view forecasting the future only describes the set goals and orientation of curricula in vocational education. The concept of teaching and evaluation encountered in practical activities, however, rests on largely outdated concepts of reality, knowledge and the learning process. According to the researchers

① The traditional conception of the curriculum has led to a static conception of knowledge and the use of corresponding action models (Ekola, 1991; Välijärvi, 1991; Olkinuora, 1992).

② Teaching does not simulate reality in a sufficiently complex way nor does it give the students the opportunities they need for effecting changes in their circumstances (Rauhala, 1991; Ropo, 1994).

③ Curricula and teaching stress knowledge and not, as they should, creativity, innovation, the calling into question of established truths and problem solving (Keeves, 1993).

④ The standard of knowledge of the Finnish student is high but his problem solving capabilities are less so (Keeves, 1993).

⑤ The critical assessment of one's own position and activity, and the activity of the work community, the need for reflective disassociation, the control of conflicts and the complexity of the action milieu are but briefly touched upon, and education is not really concerned with acquiring the means of changing and reorganizing working life with producing well-adapted workers for the labour market (Rauhala, 1991).

⑥ There are shortcomings in the shaping of wholes, and co-operational practices are looked upon as being merely marginal (Rauhala, 1991).

THE DIRECTION OF DEVELOPMENTS IN VOCATIONAL EDUCATION

Central aims and values. The central aims of educational policies in Finland of late have been not only to educate the entire age group but to change over to a more flexible educational system. Flexibility entails more student-centred study methods, greater spontaneity and independence of study, and better opportunities for individual choices in the study programme.

The objective is furthermore to support sustainable development and to keep education internationally competitive by means of continuous development.

Modular curricula. A great structural and curricular reform is under way (1994-1996) in vocational education (Regulation #78/011/94 of the Ministry of Education). The examination structure is broadened by framing large-scope basic examinations in individual fields, by changing over to a system of consecutive examinations, and by integrating examinations on different levels in order better to further the taking into account of studies completed elsewhere and to develop, through experimentation, a system of institutions of higher vocational education (polytechnics). Furthermore, as a result of the new Act on Vocational Diplomas (306/94), examinations in future may be taken irrespective of previous place of study or means of acquiring professional skills. Concomitantly, adult education will be brought under quality control.

The main principle governing the curricular reform is to reduce national control and to increase the responsiblity of the educational institutions themselves. Another important objective is to increase the dynamism of the curriculum, making a changing reality and the students' study results and motivation regulate the constantly changing curriculum. This will ensure that the curriculum is not only never really completed, but becomes a process calling for vigorous research and development. To keep an even step, the teacher will increasingly have to analyse his own doings and activities.

The central aims of the national core curricula are:

① to make known the objectives of educational policy and to define the tasks and values of vocational training,

② to describe the degree requirements for each field of vocational study and the principles involved in building individual vocational degrees,

③ to safeguard a sufficiently uniform vocational standard on the national level,

④ to guarantee the national and international comparability of examinations,

⑤ to integrate fields and levels of study in compliance with the principle of lifelong study,

⑥ to create and promote a new study culture and new ways of study and to stimulate the development of curricula and instruction at the various vocational institutions, and

⑦ to act as a basis for the evaluation of national and international professional standards.

The elements describing learning and content in the curriculum are framed into greater unities, modules. The modules may constitute units of action or factual material and they may be implemented as projects. A curriculum based on modules is believed to further the development of students' capabilities such as how to master large wholes and to have recourse to reflection before acting and when learning (cf. Schön, 1987 and Moon, 1988). A modular curriculum will help do away with the traditional way of study and instruction by individual subjects. The change-over, however, will require co-planning and the organization of instruction as team work (Lappalainen, 1992).

From seclusion to co-operation. Personal choices and the flexible exploitation of prior learning require co-operation between educational institutions on various levels. The collaboration experiments currently in progress between universities and vocational institutions (polytechnics included) and between vocational and general upper secondary schools (Hytönen, 1993) together with a more flexible examination structure (Rauhala, 1994; Nurmi, 1993) have helped make the barrier lower between different levels of education and increased the students' possibilities of more spontaneous and independent studies.

In support of the changes occurring in educational culture and learning a network of **learning centres,** as they are called, operating in and between already existing educational institutions, will be developed. The learning centre is a conglomerate, a vision, if you like, of pedagogical, functional and administrative decisions aiming at revising study methods and creating an overt scholastic culture stressing co-operation and flexibility. The centres put learning before teaching and innovative reasoning before imparting knowledge, the emphasis being on easily accessible opportunities for learning new things.

More flexible study times. Studies in non-graded schools facilitate individual progress and an individual choice of courses. The varied programmes of the educational institutions with respect to time (nights, summer, weekends), content and many joint programmes increase the multiplicity of choices. Studies in a non-graded school benefit especially those who, being gifted and motivated, are capable of fast progress in their studies and those whose circumstances do not allow full-time studies.

From teacher-led to student-centred means of action. Vocational studies proceed from a concept of learning that stresses the activity of the learner (Koro, 1993; Räisänen & Frisk, 1994). This concept emphasizes the students' responsibility for the organization of their studies, their rate of learning and their evaluation of their study results. The goal is to motivate the student and guide them in acquiring knowledge to improve their skills spontaneously and of their own accord parallel to their needs to improve their learning skills and independence. The point of gravity has shifted from teaching to measures in support of learning and from the acquisition of established knowledge to the searching for new knowledge, to the use of knowledge in actual work situations and to the setting-up of personal goals and objectives and developing personal evaluation capabilities. As a result of tutoring, co-operation also between students will improve.

End-of-programme practice and/or final paper. End-of-programme practice is designed to explore the students' professional capabilities in greater depth, improve their grasp and use of a complex stock of knowledge and their aptitudes for learning. It will help them to better familiarize themselves with their own future profession and related trades and strengthen their readiness to go out to work. They take part of, possibly even specializes in the use of different work methods, product development and the development of their own fields. It will strengthen the development of the student's professional identity and ethics, increase entrepreneurship and the student's sense of responsibility and the standard of their work.

End-of-programme practice may consist of a set of tasks, project work, product development or the like. It always includes a written paper. In this article the experiences gained from an experiment to develop health care education will be discussed in some detail. Further the research results as to what ways research findings, as one form of end-of-programme practise, can promote the acquisition of a profession will be analyzed.

From training to gainful employment. Genuine work conditions will promote the acquisition of in-depth professional skills. During practical training the student may apply his knowledge to genuine work situations, get training in the acquisition and production of knowledge and gain practical occupational experience.

Practical training is guided. It may be completed beforehand, i.e. while still studying (sandwiched between courses, in the summer months etc.), or after the completion of studies. It is recommended that part of the students fulfil their practical training abroad. The vocational institutions may also form projects with working life and in this way participate more extensively than heretofore in the development of their field. At the same time, the student gets a chance to learn project work and a new creative way of work.

The education of students in entrepreneurship may be promoted also through work shop activities, brainstorming for new business ideas, and business enterprising (incl. simulated businesses) in the schools themselves. End-of-programme practice, the practical vocational training of teachers and the use of travelling experts still constitute means of bringing working life, studies and teaching closer together.

RESPONSIVE STUDENT EVALUATION IN VOCATIONAL EDUCATION

The Basis and Principles of Evaluation

The system of evaluating vocational training in Finland was altered in the mid 1980s. A new trend, termed responsive student evaluation, arose focusing on the assessment of the quality and individuality of learning. Students' study results were no longer compared, the emphasis on being on the educational goals set forth in the curriculum and formulated in collaboration with representatives of the labour market. To determine the implementation and realization of responsive student evaluation in Finland an experiment was carried out in health-related education in 1987-1991.

Positive and critical attitudes on part of the students toward their own work have been specified as a core element of the experiment in responsive student evaluation (Schön, 1987; Brookfield, 1988; Leino-Kilpi, 1991, 1993a). Evaluation cannot be separated from any of the steps involved in the learning-teaching process and it has two important functions: to promote reflection and to control the quality of learning. Promoting reflection means that the students at all times have to examine new data in relation to their previous knowledge, skill and experience. In this way they will get training in the continuous evaluation of their personal accomplishments as they go out to work. Promoting control is arranging summative situations for the evaluation of learning results on the individual and group levels. Responsive evaluation due to its support and control of reflection cannot be fragmental but has to be as holistic as possible and take into account as many criteria for the control of quality as possible. One has to learn to deal with occupational situations in different ways, taking into consideration all theoretically justifiable solutions.

The main features of responsive student evaluation are shown in Figure 1:

Uniqueness of learner	Individual growth is the content of evaluation. It requires knowledge of the student by the evaluator.
Reality Commitment	The foundation of learning standard is the patient reality. It demands evaluation in real situations and the use of both theoretical and experience-based knowledge.
Context-Sensitivity	Learning occurs in a given historic, social and temporal context: it is continuous and dynamic by nature. Evaluation requires the binding of contexts to each other.
Inductivity	The learning process is both inductive and deductive. The evaluation of inductiveness means retrieving what has been learnt earlier, the recognition of variations of the learning results.
Holistic Perspective	Learning is the alteration in numerous ways of the individual's structures of knowledge and action. Appraisals have to be combined taking into account all the different perspectives. A holistic orientation of reality is required.
Methodological Variability	Many things result from learning. The methods of evaluation must be capable of gleaning diverse information from the results, relate them to each other, the context and the development of the individual.
Reciprocity Interaction	Learning occurs in interaction with other human beings. There is a reciprocity of resources.

Figure 1. *Essential Factors in Responsive Student Evaluation (Leino-Kilpi, 1991)*

Responsive student evaluation is based on the conception of the uniqueness of the student: evaluation promotes learning, helps fortify a positive self-image, and provides feed-back on progress. The aim is to help students develop into critical, flexible individuals capable of co-operation and of developing and assessing their work. Student evaluation is also part of the overall evaluation of the school and is a source of information to the labour market of the standard of proficiency of the vocational school graduates.

Evaluation must conform to reality, be holistic and methodically varied. Important aspects are broad skills and a good grasp of the work processes coupled with a capacity to learn and to evaluate (metaknowledge). The acquisition of a thorough knowledge of the work processes can be promoted by monitoring and assessing, more than heretofore, the student's occupational skills in real work situations. The forms of evaluation should be methodically varied, stimulate learning and be based on a two-way dialogue between the teacher and the student. The task of the evaluation is also to guide instruction and the teacher's choices in order to promote learning and maintain student motivation.

The Experiences Gained from the Experiment in Responsive Student Evaluation in Health Care Education

The experiment in responsive student evaluation was carried out in collaboration between the National Board of Education, the University of Turku and the Turku Nursing College (Leino-Kilpi, 1991, 1992, 1993a, b; Salanterä & Leino-Kilpi, 1992; Säämänen & Leino-Kilpi, 1992). The students in midwifery, medical-surgical nursing, and public health nursing together with part of their teachers engaged in the project for the duration of training, i.e. a period of three and a half years. The experiment investigated:

① the possibilities of integrating the theoretical and practical content of the courses contained in the curriculum,

② the possibilities of promoting self-evaluation among the students and the students' awareness of the set goals, and

③ specifying the quality requirements for learning results and the principles for evaluating results.

The curriculum consists of different courses that together make up the total of the requirements for any specific field of study. With regard to the course content selected for the experiment a uniform basis of orientation was designed and the teaching and evaluation of the courses were integrated. The integration of instruction meant that the teachers, for the duration of the experiment, were free to plan strategies together, teach study sections jointly and include study content common to students in different fields. Evaluation in turn meant that the factual content of courses was evaluated by means of common work tasks and that teachers prepared summative tests to be taken jointly by students in different vocational fields. The participating teachers experienced the co-planning, implementation and evaluation very positive and wanted to go on even after the experiment was over. The co-operation was felt to promote learning holistically: the individual courses contained in the curriculum seemed to come better together as complete structures. The experiences reported by the students have also been encouraging; the students are of the opinion that the collaboration between teachers has helped them view their studies more multidimensionally than before.

Theory and practice were integrated in a way that the theoretical component of the courses was systematically joined to the in-depth practical component. In this way, the teachers could be certain that the students had the theoretical foundation necessary for practical work situations and for the planning and implementation of the practical component. The broad theories of nursing science that the students familiarized themselves with at first during the period of instruction of theory and later on in real patient situations constituted the concrete instrument of integration employed during the experiment. Also in this respect, the results of the experiment were very positive.

The one drawback mentioned by a number of students was that the teories not always be easily identified in working situations and that theory did not always support practical work. In this respect it appears that the dilemma particularly of health care education, i.e. the binding of theory to practice, still remains an unsolved problem (see also Hentinen, 1989). The development of clinical instruction therefore must be one of the central areas of emphasis in the future. It calls for new innovative forms of teaching and follow-up research.

Self-evaluation and the students' awareness of their goals were promoted in many ways during the experiment (see Leino-Kilpi, 1992, 1993b). Before commencing their studies the students, for one thing, laid down their goals in writing. The goals were exploited as the basis for evaluation as the studies progress. For instance, the students have graded their own achievements from the set goals. The laying down of the goals was found by many students to be difficult and some students only managed to produce a repetition of the goals set down in the curriculum, whereas others were able to relate the goals in the curriculum both extensively and analytically to their own personal aims. The set objectives were systematically exploited as a basis of evaluation during the experiment, but their abstractness to some students was a real problem. When evaluating their personal test results, the students, however, systematically were more critical than their teachers.

Self-evaluation was, in the main, made in the form of a journal or register (Leino-Kilpi, 1993a) that the students keep throughout their studies. In the journal they registered their goals as well as their evaluation of how well these goals have been achieved. The journals were commented on by the teachers at the end of each term and analyzed at the end of the experiment. The analysis has disclosed several problem areas in student self-evaluation. It became clear that self-evaluation had concerned the following areas:

① me and my inner self, my decisions and what caused them
② me and learning
③ me and instruction/the teacher
④ me and research and
⑤ me and the patient

Most evaluations in the journals were concerned with the relation between the inner self and instruction; analyses of me and my relation to the patient were much rarer. The result, in this respect, is significant: judging by the journals, the students, during their studies, only seldom reflect on their relation to the patient. Instead, learning and instruction seem to form things apart (see also Leino-Kilpi, 1993b). This fact is essential to the development of the content of self-evaluation in future.

During the experiment self-evaluation was carried out also by means of various tests for determining learning strategies. Kolb's test based on learning by experience (Kolb, 1984) and Entwistle's test mapping learning orientation (Entwistle, 1986) were both used. Students found the tests to be a very beneficial and enjoyable way of evaluating one's own activity and progress. In the course of the experiment, there was a slight shift of the learning strategies towards more holistic strategies. It is evident that the journals and various tests help support self-evaluation. They support the students in setting up their goals and act as a channel for resolving personal study problems. Most of the criticism in the journals was directed towards the ways of implementing clinical instruction.

Responsive student evaluation requires that the evaluation criteria are in support of the function of development. During the experiment, this constituted the basis for specifying the evaluation criteria for each course that were then tested when evaluating the theoretical and practical subject matter. The criteria also constituted educational goals. Separate evaluation criteria for the structure of the summative tests were then drawn up. The concept of cognitive complexity (Mandl & Huber, 1978) formed the point of departure of the set criteria, dividing up the standard of achievement into five categories (cf. von Wright et al., 1979): the atomistic, the atomistic-multilayered, the multilayered, the multilayered-holistic, and the holistic categories. By means of this categorization the essays on common topics written by the students in the course of their training were evaluated, testifying to a significant shift toward a higher level of cognitive complexity; at the end of their training, the number of atomistically composing students was fairly high, that of the students writing holistically relatively low (Leino-Kilpi, 1991; Säämänen & Leino-Kilpi, 1992; Salanterä & Leino-Kilpi, 1992). Among the disclosed problems the excessive abstractness and generality of the criteria was particularly marked: the criteria did not always work as an evaluation standard. The experiment has made it clear that special attention should be called to the setting up of evaluation criteria in vocational education in a way that the ones that are indeed essential to the individual sectors of vocational education are exploited in full.

Future Challenges with Regard to the Development of the Evaluation of the Standard of Learning

Responsive student evaluation is still in the process of taking its bearings in Finland; all manners of development are under way in educational institutions. In view of the finished experiment, however, the following would appear to be the projects for the future:

* The structure of the curriculum is made more holistic, which, in turn, will facilitate the making of evaluation more holistic.
* The criteria for evaluating students' standard of learning are rendered more concrete without jeopardizing their theoretical justification.
* The integration of theory with practice is supported by evaluation.

- The responsibility of the students for their studies is promoted concomitantly with more attention than before being drawn to the students' motivation and their capacity for learning and evaluating.

INCREASING THE STORAGE OF KNOWLEDGE IN VOCATIONAL EDUCATION BY MEANS OF RESEARCH

The storage of knowledge in vocational education is changing and constantly developing. In vocational education the students have to acquire knowledge and skills for the continuous evaluation and increment of their professional qualifications together with a will to grow. The best way to achieve this during their training is for them to question their own routines and constantly search for new knowledge concerning the foundations of their professions. New knowledge is best found in the world of research: professionals, therefore, should be active consumers of reliable new information.

The consumption of research findings for occupational purposes however is not a matter of course. According to recent research projects in health care (e.g. Mander, 1988, Leino-Kilpi, 1991; Säämänen & Leino-Kilpi, 1992) there are at least four reasons for the non-use of research findings:

- The professional does not know about it.
- The professional does not understand it.
- The professional does not know how to apply it.
- The professional is not allowed to use it.

Even in basic training efforts are made to do away with these obstacles.

Firstly, students during training are encouraged, by means of exercises, to make a survey of and analyze research findings pertaining to their own professions. Means and methods have to be learnt: how to get access to research findings (data retrievals), how to benefit from professional journals and how to participate in further education courses. In this way the student when graduating know the channels they need for acquiring new knowledge and increasing their skills. It goes without saying that co-operation with the universities will help further this aim.

Secondly, during training research reports will be analyzed in a way that the students develop a sufficient readiness to read such reports in general and to appreciate the application value of research findings. This means that there has to be courses in research methodology and training in report analysis. Sufficient training will familiarize students with the language used in research reports and teach them a quick way of locating the essential. Personal contacts with the researchers will, of course be extremely helpful.

Thirdly, the application of research findings to one's own profession constitutes a separate area of readiness. Application means that the professionally employed is capable of identifying and gleaning such information from the research findings that is relevant to his own professional practices and to alter them, if needed, in a concrete way. Essential in application is the follow-up and evaluation of the results.

Fourthly, the exploitation of the research results is largely dependent on the structure of the work organization, managerial practices and the prevailing action ideology. For instance, the organizations of health care may differ markedly from each other in this respect; the application of part of the research results is relatively easy and is supported by management, whereas part of it follows tested, well-known practices. Through education it is possible to influence matters and train students to analyze organizational features and influence the ideology behind them: within the organization each and everyone is part of its ideology. On the other hand, also management makes part of vocational training and managerial ideologies can, therefore, be influenced by influencing instruction.

How are students graduating from vocational training induced to study research findings? In Finland the matter has been under investigation in health care education (Säämänen & Leino-Kilpi, 1992). The investigation comprised an analysis of the final papers of three groups of students at the end of their period of in-depth studies. The sample group (N=58) included students in midwifery, medical-surgical nursing, and public health nursing. The results indicated that students generally used the textbooks and professional journals when looking for research information and only seldom the original research reports themselves. Moreover, the main stress appeared to be on empirical matters, the critical evaluation of the research findings being fairly minimal (see also Mander, 1988). The results indicate that there is still a need for developing curricular solutions in health-oriented education. The students have also criticized instruction concerning the use of research findings (Leino-Kilpi, 1993b).

How then has a solution in this matter been attempted in instruction? The chief method has been woven into the section on in-depth studies of the curriculum, where the aim for one thing is to train the student to apply research findings in their own work, to encourage them to acquire tested research knowledge for the development of their profession and the activities of their work community and to participate in resolving any practical problems that may crop up. In practice, this has meant that students in a number of professions have prepared a brief study to train themselves in the use and analysis of research findings. The studies have frequently included the gathering and analysis of empirical material. Another form of instruction has been the written analysis of extant research material in regard to some professionally important theme, when the student has had to look for concrete answers to questions, using earlier research reports. In the future this kind of teaching methodology will be needed especially when developing the forms of end-of-programme reports.

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A CASE STUDY OF STUDENT SELF-ASSESSMENT IN UPPER SECONDARY EDUCATION

Johanna Lasonen

ABSTRACT

The study focuses on student self-assessment with the following research objectives: (1) evaluating the implementation of self-assessment in upper secondary school education, (2) identifying the criteria students use in self-assessment; and (3) identifying their expectations concerning the assessment reform. The findings revealed that fifty per cent of all students had received self-assessment assignments. As a part of teaching, student self-assessment was implemented more frequently on vocational courses than in general subjects classes. Students preferred to compare their learning outcomes to educational goals and the requirements of their future occupations. Implications for utilizing self-assessment in the acquisition of higher order workplace competencies are discussed.

Descriptors: *self-assessment, upper secondary education, assessment reform*

OVERVIEW

Student self-assessment serves as a starting point for examining various kinds of learning. Learning is an essential element of educational effectiveness and quality. In self-assessment, students review not only their learning outcomes but also the experiences that lead to those outcomes. Student self-assessment helps to form habits of self-reflection that will carry over into other learning and working situations. In self-assessment, the learner reviews and judges what was done, how it was done, and how it is related to the learning process and product. The learner also reviews her/his own evolving self as a learner. A framework of self-assessment is introduced in Figure 1 (see Astin, 1993, p. 10).

A FRAMEWORK OF SELF-ASSESSMENT	LEARNING OUTCOMES	
	AFFECTIVE	COGNITIVE
INDIVIDUAL	Self-esteem	Knowledge level
Inner states	Values	Thinking skills
	Attitudes	Basic skills
	Beliefs	Special talents
	Motivation	Achievements
	Aspiration	
SOCIAL	Habits	Career plans
Skills	Hobbies	Performance
Behaviour	Human relations	
Competencies	Citizenship	

Figure 1. *Individual and Social Factors Related to Student Self-Assessment of Learning Outcomes*

Self-assessment of the outcomes of affective and cognitive learning takes place at the individual level but reflects, at the same time, the individuals' social environments with their events and people. Learning often occurs in social contexts.

The theoretical framework of the concept of self-assessment is connected with qualitative evaluation, self-directed learning and reflective expertise. The paper first describes how student self-assessment is associated with the concept of self-directed learning, motivation, and the model of knowledge structure. The second section gives an overview of the historical and current perspectives of self-assessment research. The third section discusses the findings, drawing conclusions and proposing implications for the integration of self-assessment activities and higher order workplace competencies.

Theoretical Framework

Self-assessment is considered a part of the affective and cognitive dimensions of learning. Making progress in learning leads to improved self-assessment and decision-making skills. As an element of self-directed learning self-assessment is included in the learning process and product (Koro, 1993; Varila, 1990).

Banta & associates (1993) found that senior college students regarded self-assessment as a skill and a readiness. According to Boud (1991), students need to master critical thinking skills if they are to be able to assess their learning and ways of thinking on their own. Self-directed learning is a process where students voluntarily set their learning goals and plan their studies. Varila (1990) linked self-directed learning to such learning characteristics as consciousness of goals, planning abilities, performing and evaluation skills and an openness to new challenges. Zimmerman's (1989) concept of self-regulated learning depends on metacognitive, motivational and functional activities. He suggested that self-regulated learning involves the use of self-regulated learning methods, positive causal self-attributions and a commitment to educational goals. By espousing goals and defining personal objectives students take a stance on the methods with which they can reach their objectives. Learning motivation deals with goal orientation.

In addition to goals, learning motivation is related to values, expectations and other affective dimensions. Learners have a certain value orientations with regard to the meaning of goals and assignments. Learners' expectations of performance outcomes involve the demands they set for themselves concerning gaining their objectives. Making plans for gaining goals is influenced by self-efficiency beliefs (Schmuck, 1985). Self-efficiency beliefs are beliefs that individuals hold concerning their ability to cope with certain tasks in particular situations. A belief that performance levels are related to one's actions makes individuals set higher expectations of success and persistence. If they perceive no relationship between performances and outcomes, it may lead to passivity, fear, lack of aspiration and underachievement. Weiner (1985) refers to the phenomenon as 'learned helplessness'. People's beliefs differ from their ways of self-appraisal while coping with situations and performing tasks. Feelings and beliefs concerning self are connected with knowledge structure.

The model of knowledge structure has also been adapted to cover the construction of self-knowledge (Markus & Nurius, 1987). Self-knowledge may be organized on knowledge structures similar to those underlying scientific conceptions and content knowledge. Different conceptions of self (achieving self, caring self etc.) are revealed in various situations. People develop different self-representations through their experiences and self-reflection. Students and especially professionals have many possible selves. The model of knowledge construction shows the central role of self-reflection in conceptualizing occupational activities (see Dewey, 1938; Schön, 1983; 1987).

Advanced strategies of knowledge acquisition, metacognition and self-regulation contribute to the effective utilization available information. Processing knowledge includes metacognitive and self-controlling functions. Metacognition is the conscious control and regulation of one's own knowledge and skills learning (Peterson, 1988). The aspect of consciousness in metacognition indicates the learners' knowledge of three variables concerning persons, tasks and strategies which influence performance and the ability to cope with various situations.

A consciousness of personal variables is knowledge about one's own cognitive performance. Through perceived competence and self-concept, this aspect of metacognition is related among other things to motivational structures (Cantor & Kihlström, 1987; Markus & Nurius, 1986). Knowledge of the task variables includes information that enables learners to evaluate the difficulty and requirement levels of their assignments. Strategy variables involve learners' knowledge of and skills in problem-solving methods and their applications.

In addition to knowledge of persons, tasks and strategies, self-control and the self-regulation of occupational learning activities are essential in professional growth. Brown et al. (1983) determined three general processes through which metacognitive controlling functions are developed from childhood - planning, monitoring and self-regulation. Such activities are related to metacognitive knowledge.

Monitoring, self-regulation and self-control are basic functions of metacognition (Cantor & Kihlström, 1987). Monitoring serves to direct attention to performance and self-assessment with a view to finishing tasks. Self-regulated activities comprise behavioral changes through monitoring. The ability to control comprehensive personal and environmental conditions leads to good learning results. Metacognitive and self-regulative assignments are helpful for students engaged in acquiring occupational content-based and social knowledge.

Research on student self-assessment has seldom dealt with the issues of in-depth learning and motivation. Leino-Kilpi (1993) is an exception with her studies on nursing education among health care students.

Research on Student Self-Assessment

International research on student self-assessment has mainly focused on the learning of college students (Boud, 1991). Finnish studies have also examined vocational school students (Leino-Kilpi, 1993). Research on the issue dates from the 1930s (Diggory, 1966; Sumner, 1932). A more systematic focus on self-assessment emerges in the 1960s.

In the 1960s, researchers took up students' predictions of the grades they would receive from their teachers (Doleys & Renzaglia, 1963; Shirts, 1968). Falchikov and Boud (1989) showed in their meta-analytic study that students could quite accurately predict their grades. Beginners tended to overestimate and senior students to underestimate their grades as compared to the grades the teachers actually gave them.

Other areas of self-assessment emphasized in the 1970s were work tasks and expertise in teacher education and medicine. Students' content knowledge and self-assessment were connected to professions and job tasks. Boud (1991) noted that the educational function of student self-assessment was realized in the 1970s.

Heron (1988) associated the concept of student self-assessment with occupational upgrading and experiential learning. He suggested that expertise requires skills of self-assessment and a willingness to engage in continuous learning.

In Finland, reflective teaching and self-reflection have been studied by Järvinen (1989, 1990), Kohonen (1989) and Ojanen (1990). Järvinen was influenced by Kolb's model of experiential learning, and by Schön, Mezirow and Jarvis's approaches to adult education. Australian research on self-assessment and Finnish research on self-reflection have focused on professional education and growth in persons in higher education whether as teachers or as students.

Studies on student self-assessment conducted by Leino-Kilpi (1993), Räisänen (1994) and Linnakylä (1994) have concentrated on general upper secondary and vocational students' learning in Finland. Hänninen (1994) did a theoretical study on self-assessment as an aspect of holistic and continuous learning.

Most investigations on student self-assessment may be characterized as evaluative studies of groups of students, teachers or methods. Research findings have added to our knowledge of how to improve some dimensions of the educational process and product. Missing are longitudinal studies on the effects of self-assessment in skills development.

Because assessing one's own performance helps to focus mental processes on the activities necessary for attaining short- and long-term goals, it is important to know whether the learning of self-assessment is systematically involved in teaching and education.

A SURVEY OF THE IMPLEMENTATION OF SELF-ASSESSMENT IN FINNISH UPPER SECONDARY-LEVEL EDUCATION

Purpose of the Study

The purpose of the study is to evaluate to what extent self-assessment is being implemented in those Finnish institutions of general and vocational upper secondary education that are running pilot projects of the youth education reform. The ongoing Finnish upper secondary education experiment extends the range of opportunities for completing a vocational diploma, the upper secondary curriculum or a combination of the two through the collaboration of vocational institutions and general upper secondary schools. Sixteen localities are taking part. A wide-ranging experiment in vocational higher education is also in progress, with 22 temporary polytechnics participating. The experiment covers eighty-four per cent of all the subject fields taught in occupational higher education (Lampinen & Numminen, 1994). This initiative will also produce greater compatibility with the credentialing systems and standards being used in the other European Union countries. The purpose of this reform is to raise the standard of higher vocational studies and to devise new programmes leading to higher occupational diplomas through collaboration between vocational and general education institutions (Ministry of Education, 1994). The objective of both is to explore the possibilities of diversifying education and creating flexible and individualized programmes. The strategies adopted for accomplishing the goal can be characterized as moving away from state mandates to local control with a loosening of rigid curriculum requirements. Inter-institutional cooperation helps to lower the barriers between different forms of education, offering more options to students and aiming to meet changing demands for knowledge and qualifications. General upper secondary school students can take courses at vocational schools and vocational school students can take advanced general courses. Some students may also choose a combination of advanced general and vocational courses that will provide them with a vocational diploma as well as a certificate of matriculation.

The Finnish upper secondary education reform aims at attaining educational policy goals in preparing the youth for workforce (Lasonen & Frantz, 1995). Policy goals at the level of educational structure, however, can hardly be achieved if the reform is not brought to the level of implemented curriculum. The essential question is how well students learn in the reformed environments. Assessing learning is an important component of teaching. Student self-assessment helps to ensure that the learners are themselves made responsible for their learning.

The assessment of learning may be based on an assumption that all students should acquire the same knowledge (Wiggins, 1993). However, intellectual performance is personal and individual. As a part of learning assessment, student self-assessment provides information about the students' individual ways of thinking and problem-solving.

Traditionally, student assessment seems to focus on outcomes and achievements. However, student self-assessment is not only a method of evaluation but also an essential part of the learning process.

In Finland, individual aspects of assessment have received official consideration since the 1980s. According to the national guidelines for curriculum design, assessment should help students to monitor their levels of skills and knowledge. Student assessment in vocational schools should be criterion-referenced and include self-assessment (Ammattikasvatus, 1987).

This study sought to answer the following questions, addressed to 346 Finnish upper secondary school students:

① To what extent is student self-assessment implemented?

② What criteria do students use in self-assessment?

③ What do the students expect from the assessment reform?

It was expected that the findings would provide feedback for developing student assessment as well as enriching our understanding of the functions of student self-assessment.

Research Procedures

The qualitative data was collected through focus group interviews and a questionnaire with open-ended items. The first step was an analysis of guidelines for assessment included in the current Finnish educational policy and curriculum guidelines. The results of the analysis served as the starting-point for developing the protocols used in the focus group interviews and the questionnaire. The respondents of the interviews and the questionnaire were vocational and general upper secondary school students from three Finnish school districts where pilot projects of the upper secondary school reform were in progress. The school districts were selected from among the sixteen rural areas running pilot projects and from three different municipalities to form a geographically representative sample. The institutions of vocational and upper secondary education visited were located in the northwestern, eastern, and southern areas of Finland.

The data was collected in May 1994 in Hämeenlinna, Tornio and Joensuu. The questionnaire included 24 open-ended items. The respondents wrote down what they saw as the most important ideas. Most of the students addressed one theme in their responses.

Findings

Sample

The students' characteristics are presented in Tables 1 and 7 (see Appendix 1). The subjects of this study were identified through purposive sampling. Data was collected from those students who voluntarily agreed to complete the questionnaire (N=346) and to take part in focus group interviews (N=26). Most students were in their first and second year at upper secondary school. Almost a half of the students (46%) were making use of the opportunity to have courses across study lines and upper secondary schools. These students will have experience of a range of assessment methods as applied by different teachers.

Table 1. *Upper Secondary Students' Gender, Year of Studies and Course Choices in Three Towns*

Variable	f	%
Town		
Hämeenlinna	171	49.4
Joensuu	47	13.6
Tornio	128	37.0
Total	346	100.0
Upper secondary schools		
Vocational	256	74.0
General	90	26.0
Total	346	100.0
Gender		
Female	240	69.4
Male	106	30.6
Total	346	100.0
Year of studies		
1. year	168	48.6
2. year	154	44.5
3. year	24	6.9
Total	346	100.0
Course choices		
Inside own school	20	5.8
From the other schools	139	40.2
No courses outside own major subject	185	53.5
No answers	2	0.5
Total	346	100.0

Implementation and criteria of self-assessment

The respondents thought that self-assessment contributes to their learning. The first and second research questions asked the respondents to estimate to what extent student self-assessment is being implemented in connection with the upper secondary education reform, and to describe the criteria with which they compared their learning outcomes. Tables 2 to 5 show the frequencies of self-assessment situations, personal success indicators, perceived advantages of self-assessment and learning criteria among the respondents. Table 2 shows self-assessment situations identified by students.

Table 2. *Self-Assessment Situations Identified by Students (N=346)*

Occasion	f	%
During examinations	84	24.3
After finishing task	69	19.8
At teachers' request	49	14.1
During writing assignment	14	4.0
When studying	12	3.5
When engaging in sport	11	3.2
During work practice	10	2.9
Never	10	2.9
After failure	4	1.3
Do not know	7	2.0
No answers	76	22.0

During examinations students have compared their knowledge and skills with the required criteria without teachers' guidance. Self-assessment assignments seemed to have a connection with hands-on training situations. About 40 per cent of the respondents connected self-assessment with teaching periods where physical performance was required. About half the students thought that self-assessment situations and assignments were not systematically organized.

Responses to the question: "How do you know that you have improved in your learning?" are presented in Table 3.

Table 3. *Personal Recognition of Success (N=346)*

Indicators of personal success	f	%
Better grades	146	42.2
Improved understanding and greater initiative	85	24.6
External feedback	40	11.6
Positive feelings	25	7.2
Do not know	9	2.6
No answers	41	11.8

More than half the respondents learned about their success from external indications. One third of the students monitored their success on the basis of enhanced understanding and initiative, and of positive feelings.

Table 4 shows what the respondents thought about the advantages of student self-assessment.

Table 4. *Perceived Advantages of Self-Assessment (N=346)*

Advantage	**f**	%
Learning to learn and to analyze oneself as a learner	81	23.4
Learning how to study further	73	21.1
Learning to know oneself	27	7.8
No advantages	25	7.2
Raising self-esteem and initiative	24	6.9
Do not know	13	3.8
No answer	103	29.8

About 52 per cent of the respondents considered continuous learning skills an advantage of self-assessment. The following response categories could be regarded as skills required in life-long learning: learning to learn, analyzing one self as a learner, getting to know how to study further and learning to know oneself.

Table 5 shows the frequencies of the criteria with which the students compare their learning outcomes. Each criterion was coded as a dummy variable. The correlation coefficients between criteria are presented in Table 8 (see Appendix 2).

Table 5. *The Students' Self-Assesment Criteria*

Criterion	Mentioned		Not mentioned		In sum
	f	%	f	%	%
Learning objectives	273	78.9	73	21.1	100.0
Requir. of future occup.	201	58.1	145	41.9	100.0
Expected grade	142	41.0	204	59.0	100.0
Friends' achievement	96	27.7	250	72.3	100.0
Teachers' guidelines	71	20.5	275	79.5	100.0
Parents' expectations	17	4.9	336	95.1	100.0
Other[1)]	10	2.9	336	97.1	100.0

Notice1)
The other criteria include ambition, prior learning, developmental stage, course demands, personal goals, and the entrance requirements of certain schools.

Learning objectives and the requirements of future occupation were the most favoured criteria among the respondents. These criteria were related to some extent (r=.106; p.05; see Appendix 2). The correlation coefficient between friends' achievement and learning objectives was negative (r=-.186; p.001).

Students' expectations concerning the assessment reform

Discussions of student assessment and assessment reform are sometimes quite emotional. Table 6 shows the responses to the question: "What kind of assessment improves your learning?"

Table 6. *Students' Expectations Concerning the Assessment Reform (N=346)*

Good assessment	f	%
Encouraging and stimulating	116	33.6
Individual	74	21.4
Fair	32	9.2
Provides thorough feedback	25	7.2
Strict	16	4.6
Versatile	15	4.4
Do not know	17	4.9
No answers	51	14.7

More than half the respondents thought that encouraging, stimulating and personal assessment improves their learning. Feedback was mentioned as a part of assessment and as necessary for learning.

Missing responses indicated that students were not used to evaluating teaching. The more critical thinking the question required, the more missing responses were found.

CONCLUSIONS AND RECOMMENDATIONS

The findings revealed that fifty per cent of all respondents had received self-assessment assignments. As a part of teaching, student self-assessment was implemented more frequently on vocational courses than in general subjects classes. Students most often compared their learning outcomes to educational goals and to the requirements of their future occupations. The respondents' expectations concerning the assessment reform focused on encouragement, rewards and equality. They also expected more individual and thorough feedback from teachers as compared to prior assessment.

Student self-assessment provides elements for individuals' life-long developmental process. Self-assessment integrates the affective and cognitive dimensions of learning outcomes, including individual and social aspects. Self-assessment is not restricted to school activities and situations but is expected to continue after school years. Self-assessment skills can help people to cope with changes and to grow along with changes.

Through self-regulation and consciousness-raising, student self-assessment improves the use of metacognition. It can promote the learning of thinking skills, one of the most important goals of education.

In order to recognize their thinking habits and to master objectives students must become conscious of their own thinking. Regardless of how well people are taught and trained, their success in life depends on their personal decisions.

Student assessment has been short-sighted and external, aiming to make students to achieve grades. If students assessed their learning from the perspective of long-term goals and internal feedback, they could consciously train their metacognition. As a result, they become self-aware, active and thoughtful performers rather than passive observers of their learning.

Research on student self-assessment has tended to disregard its functions of promoting learning and educational processes. Studying the motivational aspect and higher-order workplace competencies of learning promoted by student self-assessment requires a longitudinal research design.

The limitations of this study are related to the fact that it is a preliminary investigation of the complex issues of self-assessment. It is left with the following unanswered questions, reflecting the gaps in studies of student self-assessment:

- To what extent are the criteria and nature of self-assessment changing in the various phases of skills development?
- What kinds of meanings related to learning process do students attribute to self-assessment in their narratives?

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APPENDIX 1

Table 7. *The Students' School, Major Subject and Grade Point Average (N=346)*

Variable	**f**	**%**
High school		
Vocational school	256	73.9
Upper secondary school	90	26.1
Major subject		
Electricity	11	3.2
Food industry	16	4.6
Catering services	95	27.9
Craft and design	57	16.0
Social work	16	4.6
Health care	23	6.6
Business	30	8.7
Maths and sciences	30	8.7
Languages and humanities	19	5.5
Academic & vocational	19	5.5
No answers	30	8.7
Grade point average (scale 4 low - 10 high)		
less than 7.0	30	8.7
7.0-7.6	101	29.2
7.7-8.4	114	32.9
8.5-9.9	81	23.4
No answers	20	5.8

APPENDIX 2

***Table 8.** Correlations between Assessment Criteria among Upper Secondary School Students (N=346)*

Variable	**F28**	**F29**	**F30**	**F31**	**F32**	**F33**
F28 Objectives						
F29 Friends' achievement	-.19***					
F30 Teachers' guidelines	.02	.01				
F31 Expected grade	.03	-.02	-.06			
F32 Parents' expectations	-.11*	.13*	.02	.00		
F33 Future professions	.11*	-.13*	.03	.08	.03	
F34 Other	-.12*	.09	-.05	-.07	.04	-.01

*** = p<.001
** = p<.01
* = p<.05

THE EXPERIMENTAL REFORM OF FINNISH POLYTECHNICS:

Structure, Curriculum, Study Programmes and Teaching Methods

Annikki Mikkonen - Jukka Määttä

ABSTRACT

The purpose of present article is to describe the development and promotion of the experimental model of the Finnish vocational higher education (polytechnic). The results based on the principal's own implications in practice and a longitudinal study of vocational higher education students. The information of the study was gathered in 1992, 1993 and 1994 by questionnaire. The results showed that curriculum planning had advanced, the training programmes had developed and teaching methods had radically changed in the polytechnic compared to the traditional institute, especially on the fields of commercial services (including hotel- and catering management, tourism and consumer & home economics services).

***Descriptors:** curriculum, experimental model, self-directed learning, self-directed study, polytechnic, vocational higher education*

INTRODUCTION

The Polytechnics are a new element in the Finnish educational system and a new part of higher education. Higher education can clearly be seen as an instrument in bringing about the necessary economic reorientation of the Finnish society in terms of increasing employment prospects, increasing entrepreneurship and broadening professional skills. The changes in the needs of society and professional working life are so quick and unexpected that it is impossible to plan again the whole educational system in advance and to carry it out. That is why the government of Finland decided to start the polytechnics by carrying out a large experimentation. The experimental units had free choice in planning the experimentation and the training programmes, but a permission given by the Ministry of Education was needed to start a new kind of a polytechnic. In this paper we will examine the process of development of the Finnish polytechnics. According to studies, the temporary polytechnics still have much to do in developing teaching and training programmes.

However, much has already been achieved particularly in the areas of curriculum development, teaching methods and internationalization (cf. eg. the review report on the development of the polytechnic experiment at Vantaa and Seinäjoki 1993). Previous studies on this issue have not been conclusive, partly because the experimental units and studies on this field are so new. The Ministry of Education has made a follow-up report every year, which consists of the most important information evaluating the experiments.

This article has three major purposes: (1) to describe the model of the experimental reform of the Finnish polytechnics, (2) to describe the curriculum planning work and (3) to demonstrate the development of the teaching methods. At first we will describe the experimental model of Finnish education. Secondly, we present the main aims for the curriculum, the development of curriculum planning and the training programmes. Thirdly, we will present some of the bases for the longitudinal study about the students in a traditional institute and the experimental units, concentrating on the changes of the teaching method and the self-directed study.

THE EXPERIMENTAL REFORM OF THE FINNISH POLYTECHNICS

The Objectives of the Experimental Polytechnics

The starting point and purposes of the experimental colleges of the vocational higher education are to rationalize the Finnish educational system, to improve its function, to increase the level of education, to make education more flexible and to take internationalization into consideration. The aim of the experimentation is to find out the operative possibilities of the polytechnics. The polytechnic experiment is based on the 1990-1991 governmental policy and act. The overall objectives of polytechnics reform are:

* the raise the level of vocational education
* to meet the changing demand for professional qualification
* to enhance the attraction of vocational education
* to improve the international comparability of vocational education
* the improve the performance of vocational education system
* to decentralize the administration of vocational education
* to enhance the local impact in vocational education.

(Laki 391/91; Asetus 392/91.)

The Structure of the Experimental Model

The experimental reform was launched mainly in 1992 in Finland (3 experimental units started in 1991). A large number of institutions, representing a variety of different fields, are participating in this project, and the experimental units are located all over the country. The polytechnics have an independent status in the higher education system. The polytechnics are comparable with the universities, but they concentrate more on the practical side, on occupations and on their development. The experimental reform of higher vocational education is introduced in Figure 1.

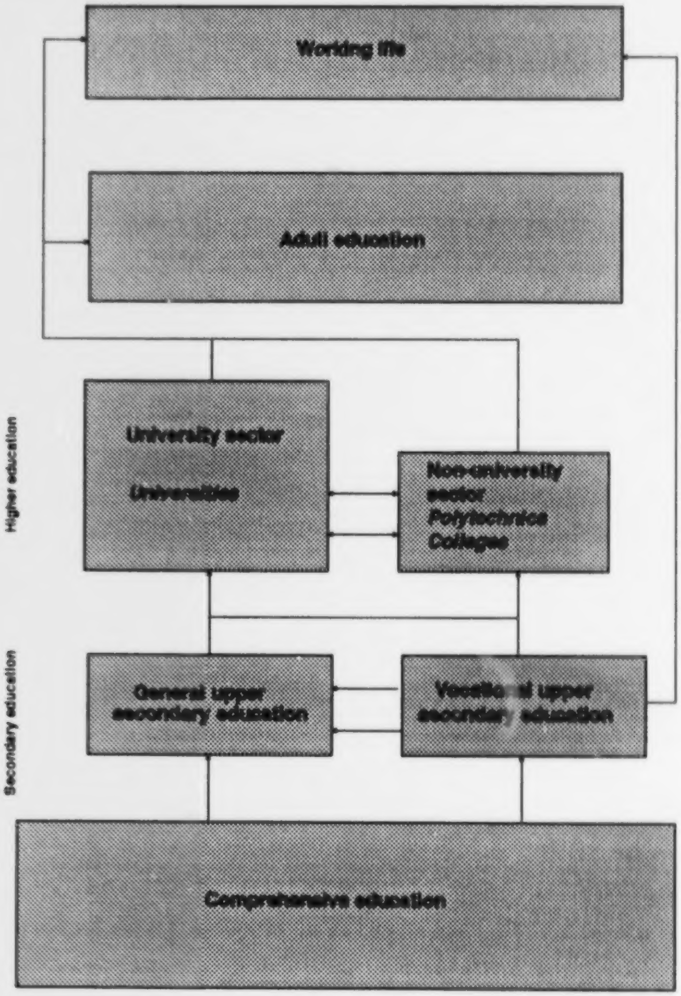
Working life
Adult education
Higher education
University sector
Universities
Non-university sector
Polytechnics
Colleges
Secondary education
General upper secondary education
Vocational upper secondary education
Comprehensive education

Figure 1. The Experimental System of Education in Finnish Polytechnic

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Colleges are a part of the tertiary sector in the Finnish educational system and they are one part of higher education in Finland. Higher vocational education is presently provided by 262 colleges for approx. 88 000 students. There are 22 experimental polytechnics, which are composed of 85 affiliated institutions. At present there are experimental units in every province. The training programmes cover about 84 % of the college or higher college specialization lines. The average size of the polytechnics is clearly bigger than that of traditional colleges. The majority of the experimental units (15) include several disciplines. There are 6 experimental units of one discipline and only one unit consisting of institutions in the same fields. (Experiments in secondary and polytechnic education Finland, 1993.)

Increasing the level of education depends mainly on the development of the training programmes (what subjects are studied/taught) and on the development of studying and teaching methods (how to study/how to teach). One of the main means to develop studying in the polytechnics is the qualification of teaching and in working life. The teachers/the staff have actively participated in training in order to improve their qualifications. A participation rate (university plus polytechnic) of 60-65 % of the age group in higher educational is desired. Finnish society is developing rapidly ("new industrialism"). In the plans Finland's the new economic situation is taken into consideration. In this situation the establishment of the polytechnic sector appears to play an important role. (Koulutuksen ja korkeakouluissa harjoitettava tutkimuksen kehittämissuunnitelma vuosille 1991-1996, 1993.)

Fields of Study and Students in the Temporary Polytechnics

The temporary polytechnics consist of the following fields: forestry and agriculture (4 %), technology and navigation (38 %), hotel and catering management, commercial services (including tourism and consumer & home economics services) (41 %), social and health care (13 %) and crafts and design (5 %) (Arhinmäki et al., 1993). The main entrance requirements are a corresponding upper secondary-level vocational education, a matriculation examination, a combination diploma awarded by an institution taking part in the upper secondary education experimentation, or corresponding studies abroad. Students generally apply for entrance in the polytechnics via the present national joint selection system devised for upper secondary institutions. Student selection is based on criteria defined by the Ministry of Education. In the future each institution will define its own selection criteria and set its own entrance examinations.

Of the students admitted to the polytechnics degree programmes in autumn 1993, 70.7 % were matriculated school-leavers, 7.7 % vocational school graduates and 21.6 % students with a school-level diploma (Experiments in secondary and polytechnic education Finland 1993, p. 16). An average of 49.5 % of the polytechnic students in 1992 were women. There were 28 000 applicants to the polytechnics, in other words, 4.2 applicants for the each place. During the first year there were 4.9 % dropouts in the experimental Polytechnics (Nuorisoasteen koulutuskokeilut ja ammattikorkeakoulukokeilut, 1994). One of the main reason why students discontinued their studies in the polytechnics was entrance to another educational unit, especially to universities.

TRAINING PROGRAMMES IN THE POLYTECHNICS AND CURRICULUM DEVELOPMENT

The Finnish vocational education has its national domain. In the past Finnish vocational education was organized in basic programmes including many specialization lines at different degree levels. The core curriculum was the same in the various institutes in Finland with some local and institutional varieties.

The experiments described here mean a new beginning and a new culture in developing and controlling our educational system. The temporary polytechnics have got a lot of freedom and responsibility to plan their programmes for higher vocational education. The Ministry of Education confirms the programmes and there are also some legal frames for the programmes.

The polytechnics had to plan their own training programmes and the Ministry of Education confirmed the programmes. There are at least three assumptions behind this method:

1. The teachers of colleges are able and willing to develop their programmes and activities if they feel free and responsible to do so.
2. The experiment found a possibility to cooperate with other institutes inside the polytechnic. This cooperation gives new possibilities to combine studies for programmes and helps the whole educational system work in a better way than before.
3. If the colleges or teachers of colleges are able to develop their programmes efficiently and with a high quality, they "earn" their title polytechnic.

Training Programmes

The polytechnic education is arranged in training programmes which replace the former specialization lines and separate programmes. The new programmes have their foundation in the programmes of the vocational college level with the challenge to develop them into higher quality and higher performance units.

According to the law (Laki 391/1991) on temporary polytechnics there must be 120 - 160 credits (3-4 years) in every programme. The term 'credit' refers a 40-hour average input of work by the student. The programmes consist of basic studies, vocational studies, a diploma work and practical training. They include compulsory, selective and optional elements. There must also be some optional studies. The programme structure is illustrated in Figures 2 and 3. Figure 2, the degree programme in economics and administration and Figure 3, the degree programme in hotel and catering, consumer guidance and home economics.

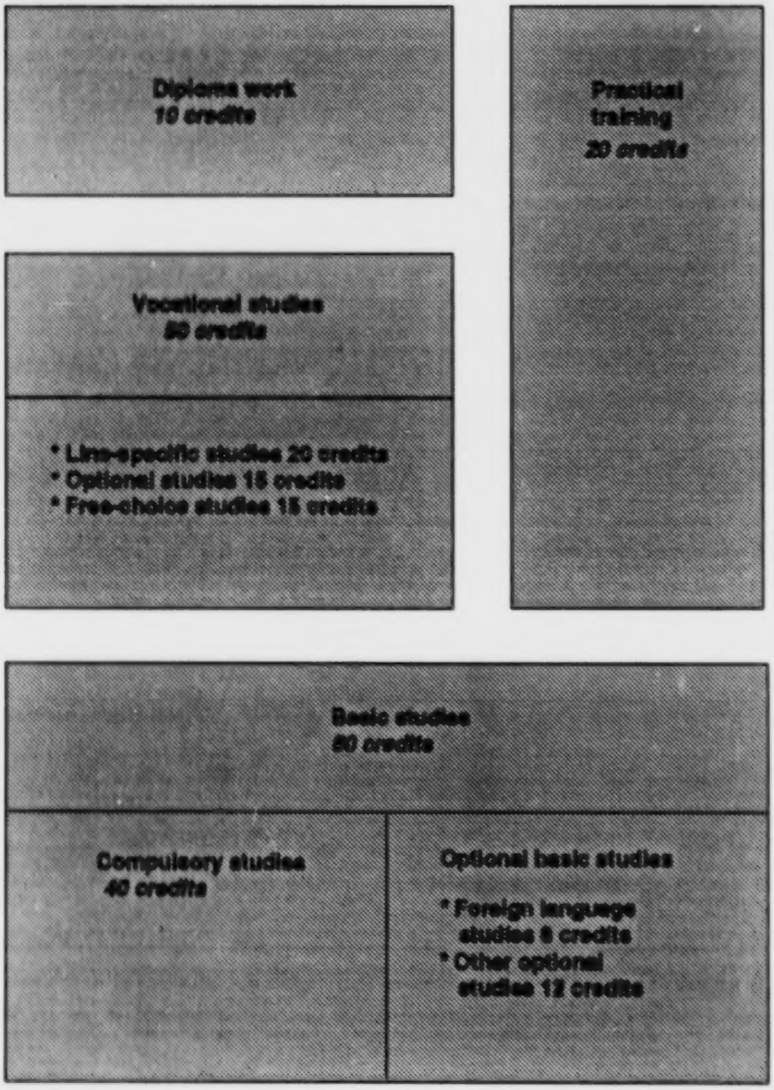
Diploma work
10 credits
Practical
training
20 credits
Vocational studies
50 credits
* Line-specific studies 20 credits
* Optional studies 15 credits
* Free-choice studies 15 credits
Basic studies
60 credits
Compulsory studies
40 credits
Optional basic studies
* Foreign language
studies 8 credits
* Other optional
studies 12 credits

Figure 2. The Degree Programme in Economics and Administration (140 Credits)

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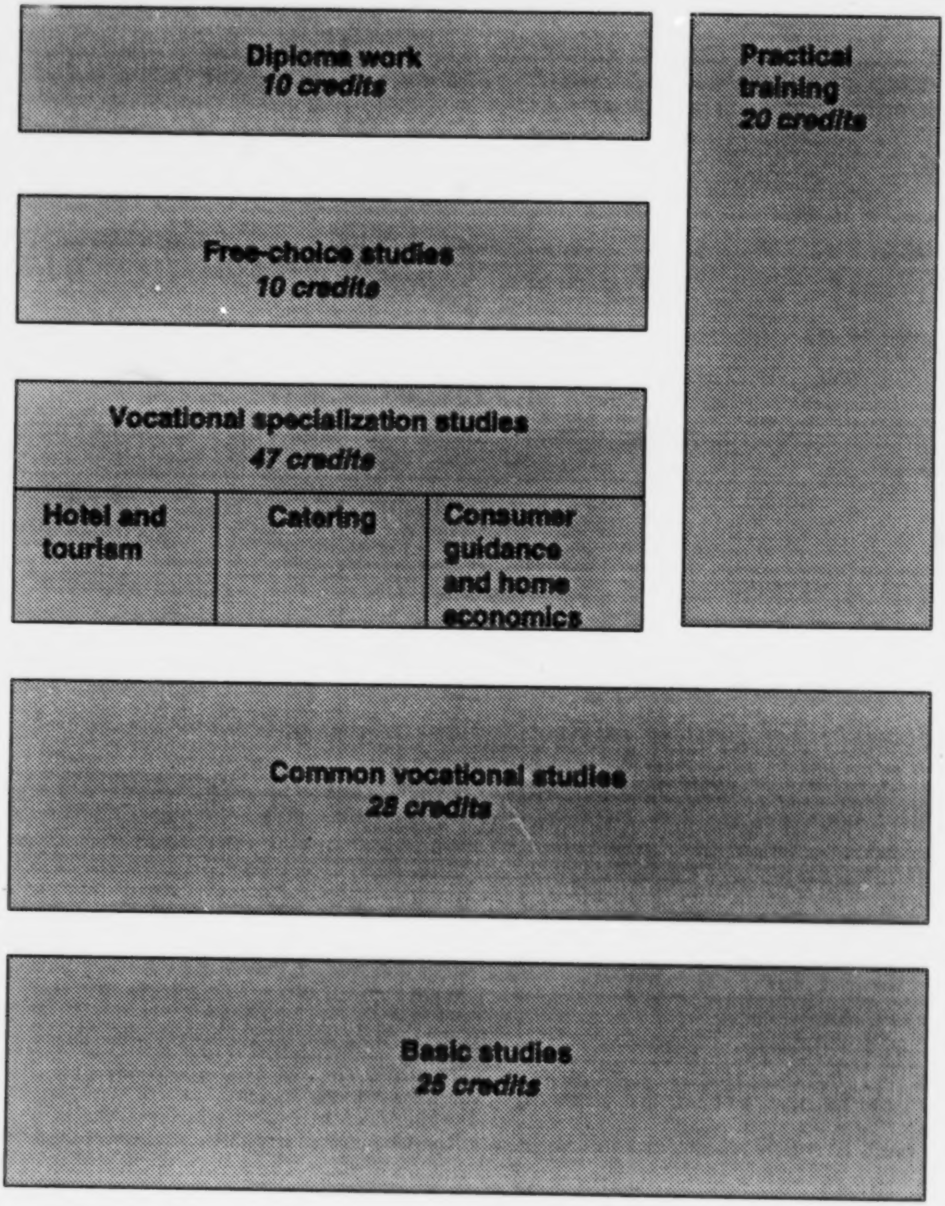
Diploma work
10 credits
Practical training
20 credits
Free-choice studies
10 credits
Vocational specialization studies
47 credits
Hotel and tourism
Catering
Consumer guidance and home economics
Common vocational studies
28 credits
Basic studies
25 credits

Figure 3. *The Degree Programme in Combined Hotel and Catering Management, Consumer Guidance and Home Economics (140 Credits)*

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The purpose is that students can choose different kinds of programmes from several different institutions. That is why there are also some free-choice courses. The annual number of admissions is around 7000; there are 48 training programmes with 180 different line options available. At the moment the experimental polytechnics offer programmes leading to 26 different degrees and diplomas.

The planning process of the training programmes varies from polytechnic to polytechnic with some cooperation inside the professional fields. Large fields like economics and administration have prepared some nationally common units or solutions for their programmes. Small fields have developed mainly unique programmes.

The programmes which have been planned together with other institutes inside the polytechnic, like hotel and catering and consumer guidance and home economics in Jyväskylä, are not yet very common. One reason might be the difference between the colleges. They have been very independent from each other and developed their own cultures. The cooperation inside the polytechnic has led to a new cooperative culture taking time to get to know each other, to respect each other and to find a common direction for professional education.

Planning the Curriculum

The polytecnics planned and developed their own curricula which were accepted by the board of each polytechnic. It means that in most cases teams of teachers planned the curricula for the training programmes. The aims of curriculum planning reflect the objectives of the whole experiment: to educate highly professional people who are able to respond to the qualitative demands of working life. An innovative, reflective practitioner (like Schön, 1983) has often been described as an expert of high quality, who is able to develop his/her job or field. This kind of an expert has both practical and theoretical knowledge and skills. This kind of process helps to find the solution to the gap between vocational training and research. The means mentioned were developing the curricula, flexibility, possibility to make individual choices and cooperation with working life. When changing the structure of the curriculum, students can develop qualities which are needed in working life. If the curriculum is too tight and authorized by the teacher or someone else there is no possibility to learn things like making choices, working independently and developing one's own work.

Curriculum planning needs a proper analysis of the future occupational skills, current programmes and their ability to cope with the demands, the concepts and content of knowledge, learning and the human being. The structure of the curriculum, its objectives, contents and the way to run it has to be planned carefully.

When the planners are teachers of the previous programmes there is always a possibility that no real change takes place. The curriculum is just written in a new form. But there is also a possibility to change. In Finland vocational teachers have both occupational and teacher education. They know the former curricula quite well and from those experiences they also realize the need to develop them. Teachers are also experts in analyzing learning processes and running the courses. Every polytechnic has arranged a possibility for the teachers to take part in further education, pedagogical or occupational, or both.

One example from the Jyväskylä polytechnic might be in order. The polytechnic consists of four colleges. The steps towards the training programmes and new curricula were following:

① An analysis of the occupational needs for the polytechnic and the qualities needed in the commercial field in Central Finland. (Itkonen, 1990).

② The experts from working life and from the universities analyzed educational needs with the teachers and took part in the planning processes. Also international links were needed for this analysis.

③ The polytechnic arranged courses in education partly for all voluntary teachers and teachers who had the responsibility to plan a new curriculum or a part of one.

④ The training programmes have been formulated with some cooperation during in-service education.

⑤ Curriculum planning required a great effort and teachers of the four colleges planned it together in teams. Then there was a possilibility to reflect one's own ideas and develop something new together, even if the cultures inside the various colleges were quite different. This process is also a teacher's way to learn new things and perspectives, to have new schemes like Mezirov (1991, pp. 4-6) describes adult learning. He points out that the habit of expectation or meaning schemes and perspectives could be transformed through reflection on the assumption that problem solving is there.

⑥ The idea of curriculum planning was to find a suitable amount of credits together so that each unit would be important in the process. It took a lot of time and effort to find a proper way to write the curriculum. The curricula of the Jyväskylä polytechnic were not finalized when the first polytechnic students started their studies in 1992. The planning process continued with the students. The curricula are now ready and for the first time they have been printed for the students who start or continue their studies in 1994 (Study guide, 1994). Now we can see clearly that it is important to develop the curricula further and perhaps make a new training programme, too.

DEVELOPMENT OF THE TEACHING METHODS

The development of the teaching methods is a means to raise the quality of learning. The teaching methods are expected to be problem-oriented and they are expected to answer the challenge of the changing demands in the labour market. One of the main aims of the development of teaching is to decrease traditional classroom teaching and to increase the proportion of different forms of individual studying methods. The new direction is based on a new comprehension of learning and new educational learning psychology. Learning is supposed to be constructive and self-directed. The teacher's role is to be a tutor, who directs, stimulates and supports his students. Teacher-centred teaching has become student-centred. The students are considered as active, free and creative subjects, not objects. The learning environment and the teacher only give an opportunity to learn. The methods by which these aims could be attained are the project-method, team-work and other independent and individual methods.

One of the most important points in developing the teaching method is closely linked with working life. The project-based learning means project-oriented studying, where working life and studying are integrated. Practically it means teachers, students and people participating in working life completing together the same project. That is why he polytechnics expected to maintain an extensive network of connections with the labour market.

A Longitudinal Study of the Students in the Experimental Units. Data, Sample and Method

The purpose of the longitudinal study carried out by the Institute for Educational Research was to serve and evaluate the development of the educational programmes of the polytechnics. One of the research tasks was to investigate the teaching and studying methods of colleges of vocational higher education and polytechnics. The empirical research concentrated on three experimental units: The Jyväskylä Polytechnic of the service field, the Pohjois-Savo Polytechnic and the Haaga Institute of hotel-, restaurant- and tourism management. The first data were collected from students of the traditional tertiary institute in 1992 (n=921), when students were finishing their studies. The second data were collected from the polytechnic students in 1993 (n=638) after one year of studies, and the third data in 1994 (n=851) after two years of studies. The longitudinal group was composed of students in four fields: commercial (including hotel- and catering management, tourism and consumer & home economics services), technology and crafts and design.

Students, 921 in all, of the traditional institutes, 68 % women and 32 % men, whose mean age was 25 (end of the studies), participated in the study in

1992. Of the sample, 61 % had taken the matriculation examination, 22 % had comprehensive school certificate and 17 % had vocational training. 851 polytechnic students, 59 % women, whose mean age was 26 (end of the studies) participated in the study in 1994. Of the sample, 81 % had matriculation examination and 19 % a corresponding vocational training. A consent to take part was obtained in 75 % of the cases.

Data for this study were collected by a questionnaire mainly in Central Finland. Each year, data were provided by the student. Student data were gathered at school or at home during a 3-week period every spring. The results of different groups were compared in order to find out the differences between the traditional institute and the polytechnic. Open questions were used to find out the problems concerning the self-directed studying methods and they were analyzed by content analysis, searching for the main problematic points.

Results

One indicator implicating changes in the teaching methods is how much time students have spent on studying. Changes in study hours in a week in different kinds of teaching method are illustrated in Table 1.

Table 1. *Time Spent on Different Kinds of Teaching Methods per Week. Comparing the Traditional Institute and the Polytechnics.*

	System		
Teaching method	Institute M SD	Polytechnics M SD	t
Traditional classroom study	25.74 (8.58)	15.16 (9.81)	17.52***
Other teacher-centred study	6.86 (8.93)	14.26 (9.63)	-12.28***
Independent study	3.97 (4.72)	7.54 (5.97)	-9.95***
Other independent study	10.22 (6.51)	12.87 (8.32)	-5.36***

Note N for institute = 718; for polytechnics = 367.
Other teacher-centred study means lessons, directed practical- and laboratory work at school, team- and seminar-lessons and personal tutoring.
Other independent study means homework, preparing for exams, assignments (essays and lectures)
* p < .005, ** p < .01, *** p < .001

According to the longitudinal-study, traditional classroom study has decreased and independent study has increased, particularly in the fields of commercial services. Studying in the polytechics is much more independent and student-centred than in the traditional institute. The findings indicated that teaching methods in the polytechnics are approaching the desired outcomes. It is too early to draw the final conclusions and decide what the findings really mean in the development of the teaching methods. Despite of the self-directed characterics in the programmes, in particular by decreasing the number of the contact hours, the teaching processes themselves have not changed very much: many traditional methods are still used.

In general the students of the polytechnic were very positive as to their first experiences in the polytechnic. Research shows that students of the polytechnic trusted more the quality of training and they also regarded study more independent and practical than students in the traditional institute. Despite that the change has been so rapid that it seems to be a problem during the transition period. Neither teachers nor students are ready for the changes.

As expected, 34 % of the students criticize the self-directed teaching arrangements, especially the guidance. The students hoped for more information about the optional courses and about their significance with regard to vocational progress and degree. The students' opinion about the attitude of the teaching staff is varied. There are some who are innovative and adapt well to the new demands of polytechnic education, but there are others who have a more conservative attitude.

The students mentioned that they would like to choose more optional studies in other schools as well. Sometimes it was impossible, because they already had enough to do with their own compulsory studies. Despite the changes in the teaching methods and curricula the students would like much more flexibility, freedom and independence in their studies. They also hoped for interactive features in the programmes, an independent approach to their studies, and a strong practical and professional orientation. Classrooms, machinery and the library were not criticized so much. Surprisingly only a few students mentioned that they wanted an international orientation in the programmes. Maybe they felt they have enough internationalization in their studies. In particular students wanted to know (1) what is the value of their degree in the labour market, and (2) what is the profile of a polytechnic degree compared to the traditional institute degree. Students' demands and hopes are no surprise to the teachers and planners in the polytechnics. Students' criticisms of the arrangements imply a very high quality of the students. They are very self-assured, critical and eminently capable of expressing their views.

DISCUSSION

In autumn 1994 experimental units started their third year in the temporary polytechnic. The results from that period are not conclusive, but they show that curriculum planning has advanced, the training programmes have developed and the teaching methods have radically changed. International evaluation of the four polytechnics also showed that the experiment has meant a lot to the schools, students and teachers. Enthusiasm was great, the teachers and students were eager and capable of developing polytechnic education to respond to future demands. Although new and innovative teaching methods have been developed, there is still much work ahead. One of the objectives of the new teaching approaches, such as problem-based learning, is to promote independence in the students. This is a key feature for higher professional education. It also requires a good library where students can study and find their own way.

It seems that the experimental model of the polytechnics is a proper way to change the education system in the shifting world, when it is impossible to predict future development. The model still needs many new solutions during the experiment e.g. the position of the staff, the limits of the responsibilities, some national aims and the position in the educational system in the country. For instance, in the beginning of the experiment in Finland it was important to disclose that the new part of the vocational education sector will be the non-university sector of higher education in Finland.

International models of higher education show us different developmental challenges. Today the experimental model of polytechnics in Finland intends to develop advanced non-university higher education for vocational and professional education, apart from the universities but in cooperation with them. One open question is what proportion of tertiary vocational education might be polytechnic degree level education, and how the fields of the future training programmes should be determined?

What is the cost of the experimental model or the permanent polytechnics? We do not have a proper analysis of the economic demands or costs we have to pay on the national level, on the polytechnic level or the institutional level or on the personal level. Each polytechnic could use all the money they managed to get for the experiment. There was only little support by the government of Finland. Each polytechnic had a different amount of money to use for the development work. Thus a polytechnic in a city where there is no university or higher education had less difficulty in acquiring money than a polytechnic in a city like Jyväskylä where there is a big and popular university. The polytechnics are not economically equal. It might be interesting to compare the polytechnics by using the economical background information. And it is necessary to evaluate the total cost of polytechnic education.

The experimenting time stipulated in the law on experiments makes it possible to carry out experiments until 1999. A regular basis must be found before that because of the students and the further development phase of polytechnics. It means that the planners will not have all the information about the experiments available, but the direction can be seen. Reseach must be continued, because there is a lot of longitudinal information that is needed for further development.

A permanent polytechnic status is not expected before 1996. In 1995 the government decided to continue the polytechnic experimentation. This decision was based on the extent to what the present polytechnics succeeded in creating a feasable vocational higher education alternative to university education. There have been also political reasons which will influence on the decision.

The Ministry of Education has released a new legislation for polytechnic studies. According to the new outline for an act on polytechnics, the polytechnic degree is parallel to a university degree (Asetus 203/94). The act of polytechnics also defines the criteria for the kinds of units that should get permanent status. The polytechnics will be established according to the following criteria:

1) the mission and vision of the polytechnic
2) the present situation of the training programmes
3) the design and action of joint training programmes for different institutions
4) the fields and volume of the training function
5) the qualifications of the teachers
6) the library and information services
7) practical training and cooperation with industries
8) organized cooperation with academic universities
9) international cooperation and student exchange
10) the local impact of the training programmes
11) the arrangement of the assessment system
(Outline for an act 5.8.1994).

One of the major criticisms of the reform of the polytechnic is too fast realization of the plan. Sometimes it seems that political reasons are more important than educational reasons in the implementation. Despite the fact that the experimentation has advanced towards desired ends also in the educational sector. The present results indicate that the development work has made good progress and that this is a good way to develop polytechnic education in Finland.

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THE TRANSFORMATIVE PARADIGM OF TEACHER EDUCATION

Jorma Ekola

ABSTRACT

This article describes challenges of Finnish teacher education. The developing society, and education as a part of it, requires an innovative and transformative approach. Real transformation means that foundations have to be reflected upon critically, for example, becoming aware of the experiences that really guide the actions, as well as questioning and changing them according to verified new knowledge. Vocational teacher education in Finland is going through major transformations today. The model of developing reflective thinking has gained momentum in vocational teacher education in recent years, at least to same extent and in some institutes for teacher education. However, little attention has been paid to considering the problems of school organizations. The first task of vocational education is to analyze the essence of school organization, to become aware of the meaning of the school code, as well as to recognize the systematic nature of school organization and its latent effect on the stakeholders of learning. Communicative reflection including the skills to analyze and interpret other persons' message and their value expressions comprises the second important readiness. The third important task is to provide student teachers with approaches of inquiry to the school's pedagogical development.

Descriptors: *teacher education, vocational education, transformative learning, transformative teaching, occupational socialization.*

TRANSFORMATIVE PARADIGM OF TEACHER EDUCATION

Many factors are calling for transformative actions concerning the Finnish vocational education system as a whole and its individual institutes. Vocational education has to keep expanding and extending the level of competence required of future citizens and professionals in working life. It must even set totally new kinds of objectives for studies.

The trends in the society and in its different sectors have become increasingly unpredictable. These trends are often surprising and may bring about even contradictory solutions, amid which individual citizens have to be able to make their own decisions. Internationalization, with its pros and cons, is getting more and more diverse and it is penetrating into the daily life of individuals and groups alike.

Finnish enterprises can no longer compete in mass-production with the countries of low labor costs. Instead, their new strategies must be based on the principles of customer-oriented and flexibly transforming services of high quality. This is one reason why bureaucratic organizations have been downsited or "deflated". Separate planning departments have been cut out while responsibility for planning and decision-making in the organizations has been taken to the level where the actual work is done. This and technological development are making also the work in the shop-floor level more challenging intellectually. In addition, collaboration and networking schemes make their own demands for qualifications.

The new phenomenological paradigm has led researchers to the fundamental issues of teaching and learning. Not that everything the recent decades have yielded has been new, though: Much a wisdom deriving from classical philosophy and having been turning up in various stages of the history of education has now got new strength and become crystallized, lending support to the education of today.

We believe again in an intellectually active, goal-seeking human being who creates his or her own conception of the world and develops him/herself autonomously. We understand the significance of knowledge in human behavior, and also what kind of knowledge we therefore need. We are more clearly aware of how human development and learning progresses, and of the rules involved. The Finnish education system and the teachers working within it seem thus to have a good reason to be transformative. They also have the elements for it. But...

IS EDUCATIONAL TRANSFORMATION FEASIBLE?

Many people hasten to answer this question: "Yes, of course, our teaching is being transformed all the time." I wonder; if this is true, how should one explain the frequent examples of the following kind:

* The leader of a transformative teaching experiment stated how they had chosen the new view of the progress of learning as their new teaching method. They faced problems in the very beginning. "Teachers had made an arduous effort by defining the orientation bases of some learning assignments and then tried to present them to pupils, *but the pupils did not understand what they were talking about.*"

* A school became enthusiastic about collaborative learning. It was practiced for the next few weeks almost in any situation. After a couple of months the students were fed up with collaborative learning. Today, the teachers of that school do not stand even to hear about that particular method.

* The interview survey we did some years ago (Ekola & Rantanen, 1988) revealed that only 10% out of nearly three hundred teachers followed the new ideas of learning in their current teaching.

* Many teachers claim in training events: "But we are already doing so." A profound discussion shows, however, that they only thought they were doing something new.

In the first two examples, as in many similar cases, things start from a strong inclination toward change and initially there has also been a firm belief that it will yield something new. But something has gone wrong, "the pupils did not understand, after all". Something crucial has escaped one's notice here.

Nowadays we easily fall into using concepts that are empty, lacking substance or any deeper meanings. For instance, such terms as 'student-centered' (but controlled by teacher) and student-oriented (and self-directive) are not synonymous. Teachers' own way of learning is always in the background of transformative development schemes. It may be reproductive, on the one hand, accepting things as they are and therefore maintaining traditional values, norms, activities or structures. On the other hand, the way of learning may build on a transformative, developing approach. First we have to distinguish between these two aspects. What is transformation really about?

REPRODUCTION OR TRANSFORMATION

Reproduction is an old sociological term, which refers, for instance, to the socializing function of school, i.e. its duty to provide the society with new citizens and labor that are capable and willing to work. Reproduction aims at establishing and maintaining previously known habits and routines that increase efficiency. In reproductive learning, traditions and authorities are not questioned but believed in "blindly". The premises, on which actions are based, are not questioned either. The information that guides the actions is adopted as granted. New principles are learnt superficially, in a "receptive" manner.

The developing society, and education as a part of it, requires an innovative and transformative approach, however. Development means changes also in the familiar foundations, i.e. in those underlying ideas and premises our functions have been built on. Real transformation means that these foundations have to be reflected critically (Mezirow, 1990), i.e. becoming aware of the experiences that really guide the actions, as well as questioning and changing them according to verified new knowledge. Through this kind of transformative learning we can construct the new grounds necessary for leading to a real transformation scheme. The examples given in the beginning reveal that reproductive learning and action seem to dominate even when people want to be transformative. We should consider, therefore, why things are as they are; why transformative learning and thus transformative actions are not realized efficiently in practice.

THREE PHASES OF TEACHERS' GROWTH

Learning is a continuous process based on experience (Kolb, 1984, 28). The positive aspect of this fact is that the increasing stock of experiences can be used as a source of motivating and stimulating materials, as the learning process advances. The other side of the coin is problematic, though. An individual's experiential schemata include certain patterns of anticipation (e.g. values, beliefs, prejudices, fallacies, routines, etc.) that direct one's perception and selection of knowledge in new situations. This way one is chained by his/her own learning history unless something is consciously done about it.

Growth into a teacher is a particularly long process in the sense that it starts with an unconscious phase already when the teachers-to-be are still in school themselves observing teachers' work from the pupil's point of view. This could be called the presocialization phase. The two other, conscious and active phases in teachers' growth are teacher education and working as a teacher.

Presocialization

Growth into a teacher starts already before actual teacher education (Buitink, 1993). First, at school we all learn a model of teaching from the pupil's perspective. This model becomes rooted in pupils' experiential schemata with years, and the more unambiguous and consistent it is, the more intensely it directs a person in his/her efforts when learning to become and acting as a teacher. According to Jarvis (1987), this kind of embeddedness of an occupational model is based, on the one hand, on situations where learning takes place although the learner is not particularly conscious of it, and on the other hand, on pure model learning.

Another learning context that has a presocializing impact on the image of the vocational teacher, is the occupational field. It has been shown in some Finnish studies (Ekola, 1991) that the prevailing features in the work practices of the occupational field have repercussions on teachers' teaching practices. In those occupations where written instructions are important for the work, they are over-emphasized also in teaching. The master-craftsman system of industrial work has been transferred also to teachers' role in respective fields. In the fields that call for open creativity, student-oriented creative learning styles are favored already in the school.

Problems of Teacher Education

We already have sufficient knowledge about the obstacles of transformative learning and actions, and also about the causes for these obstacles. As teacher education is supposed to start and direct the lifelong process of teachers' growth, it has three main tasks to accomplish: First, the fallacies and erroneous models created during the presocialization phase must be dissolved. Second, theory and practice have to be combined in a functional way. Teachers must grow into agents with "didactic thinking". Third, teacher education has to provide the would-be teachers with capabilities to confront the so-called shock of practice (Arfwedson, 1984), i.e. the everyday difficulties and organizational problems in the school.

Correction of presocialization

Learning is always tied with some context. When interacting with this context, a learner gets various experiences. These experiences may be created either directly via senses and actions (primary experiences) or through verbal interaction (secondary experiences; Jarvis, 1987). Primary experiences, which a learner does not verbalize for him/herself, lead easily to routine-like work patterns, whose background and basis the learner is unaware of. This makes changing those patterns difficult for the learner.

The students coming into teacher education hold some pedagogical models from their own school-days in their experiential schemata that may still have been reinforced by their teaching experience. These models are typically similar to primary experiences. They are ideographic, i.e. mental images of which one is more or less clearly aware. Their possible knowledge base is spontaneous, built on one's own interpretations and often shaded by emotions. If these pre-existing models are ignored, they may act preselectively when a student is learning new things (Mezirow, 1990). In this case the student does not learn nor wants to learn the views offered by an instructor. The student plays the game by the instructor's rules, uses the kind of language and acts as the instructor likes (learning assignments) but in reality thinks and acts differently. Those prior models and fallacies have to be first dissolved by bringing them up for critical analysis and reflection, pointing out the weaknesses and replacing them with new learning impulses.

Occupational socialization may have yielded routines that one tries to use also when working as a teacher. As for dissolving these routines, the same method of bringing things out applies here as well. What is more problematic is to bring together differing scientific approaches. For instance, a person with a background of natural sciences may find it difficult to get into humanistic-behavioral thinking, and vice versa.

The method of communicative reflection has been tried out successfully in dissolving erroneous teacher models, when the student group entering vocational teacher education has had very diverse experiences from school and working life. In this method the group with heterogeneous backgrounds starts by pooling the experiences they have of different teacher models. Different backgrounds bring out different models, which turns the heterogeneity into a source of enrichment for the group, regarding further analyses.

The next step is to analyse and compare the models, looking for positive and negative aspects for meaningful and fruitful studies. Through considering the causes for the effects in different models the students eventually end up with constructing "prototypes" both for inefficient and efficient teachers. This way the prior models have become conscious and verbalized while the students have found elements for a new teacher image.

Actual construction of teacher image

Teacher education is often blamed for not integrating theory and practice well enough. Teachers say they know how things are and what they should do, but are not doing it, after all. There are also other reasons for this apart from ignored presocialization. Some faults can be found from the teacher education itself.

Besides ignoring the obstacles formed in the experiential schemata during the aforementioned presocialization stage, e.g. following kinds of mistakes can be done in teacher education:

* Instead of teaching the theory of teaching, the contents taught are too fragmented or too difficult to understand. Therefore, it is impossible even to create any knowledge base that should direct teachers' work. On the other hand, students get sets of strict instructions, recipes, which are suitable for rather specific purposes only.

We have a saying in Finnish that "all roads lead to Rome", meaning that the same goal can be achieved by different means. As far as teaching is concerned, that proverb should be modified. Indeed, there are many roads leading to Rome but there are also dead-ends leading nowhere. Accordingly, we can distinguish two different traditions concerning teacher education. In the technological-rational model it is assumed that there is a prototype of a good teacher that can be transferred to a student by teaching him/her a well-defined "package" of pedagogical tricks of a good teacher. Here, the reasons for actions are not sufficiently considered nor any alternatives sought. It is living by one lesson at a time. This has been the dominating tradition in the Finnish vocational education for a long time, and it still is to some extent, although some new ideas have been sought for, as well.

The model of developing reflective thinking has gained momentum in vocational teacher education in recent years, at least to some extent and in some institutes for teacher education. This model is based on the idea that students reflect themselves upon the foundations for their actions, i.e. their causes and effects. The students are not provided with any ready-made theories of teaching or operational models but the studies consist of various alternative approaches, from which the student teachers construct their own pedagogical strategies. This approach will yield teachers with didactic thinking and flexibility who can take many roads to Rome and beware the dead ends.

* The learning process is not completed. To be successful, learning requires logical progression through certain phases so that these phases and learning during them make up an integral whole or "a complete learning process". Often the problem is that external and conceptual command of actions remain separate, there is no clear functional or conceptual linkage between lectures and various exercises. Exercises are too often done only for their own sake.

* There is no capability for transformative learning and action, because people do not learn to see the real problems or to question the reasons and conditions for the actions that lead into problems. Teacher education must prepare future teachers also to anticipate and prevent the shock of practice.

Working as a Teacher

The fact that it is not very easy to really transform education, is probably due to at least two factors related to everyday work; the pace of work in schools and the way a social organization functions, the world of behavior (Argyris & Schön, 1978), or school code (Arfwedson, 1985).

There are several studies, where teachers complain that haste and lack of time are the worst disturbing factors and causes of stress in school work. Glaxton (1989, pp. 27-34) presents some theses about the difficulties in teachers' work. There also haste and insufficient time are highlighted; decisions have to be made constantly in unpredictable situations. This constant haste results in little cooperation, decisions that are made in the last resort, and feeling of inadequacy. Are this hurry and lack of time a real condition typical for schools, or is it due to the fragmented and mechanical allocation of time and the traditional, over-active role of teachers? We need a more flexible and functional model for time allocation and critical consideration and reformation of teachers' work. We should also critically discuss the efficiency thinking in schools, in other words, the belief that we have to "go through" vast amounts of subject matters, because that is what working life expects from schools.

The ongoing curricular reform of Finnish vocational education provides some solutions to both of these above-mentioned problems. The curricula based on subject matters are being replaced by curricula based on theme and project areas, which follow better the structures of working life. In this context there will be no clear boundaries between different subjects and earlier content-based approach is replaced by competence-based thinking. This gives schools better chances to organize their work in larger units, which in turn gives possibilities to change the pace of work in the school, as well. The contents for their own sake are no longer objectives for learning but they are seen as stimuli for learning on the way toward the qualifications set as the goal.

Besides problems related to the lack of time, transformation of teaching is also hindered by socio-cultural factors in the school. Reproductive work gets support from three sources: from established power relations, which do not always tolerate changes; from social relations, which do not always facilitate mutual understanding and cooperation; and last, from the so-called school code, i.e. fixed ways of doing things, which is still combined with the norm system (Arfwedson, 1985; Argyris & Schön, 1978). On the one hand, it is thus a question of incompetence caused by competition, fears and social conflicts. On the other hand, it is a matter of socialization where individuals are made to adapt to the safe and familiar, "well-proven" thinking and working patterns and norms of the organization. Here, the aim is often to make things run smoothly, which could be disturbed by changes. School as an organization is constantly facing conflicting interests: things should run smoothly and efficiently, but then again there should be room for continuous development and change. Does basic teacher education tackle the questions of overcoming the organizational hindrances, in advance? Could this kind of precaution prove fully successful, after all?

Some sporadic experiments have been made in Finnish teacher education so as to train the prospective teachers to face the everyday work in schools. A section of studies called "A teacher as a member of school organization" includes an introductory part that outlines the culture of the school. The school is examined as an organization where language, the interpreter of an individual's thoughts, is reduced to a shared tool for communication between many individuals; and where human relationships narrow down into rigid structures and activities become institutionalized traditional practices. After this orientation stage the students have a guided period of field practice, where they get to know the culture of their training school. After this practice period each student has plenty of experiential material to analyze. This analysis is integrated with the concept of resistance toward change and consideration of the principles needed to overcome this resistance.

Skills of communicative reflection can be practiced as a means to overcome change resistance. Here, the method may include, e.g. the Hegelian process of thesis - antithesis - synthesis. Instead of making a compromise the weaknesses in one's own thinking are analyzed and new knowledge is produced (synthesis).

NEED FOR TEACHERS' CONTINUING EDUCATION

Vocational teacher education in Finland is presently going through major transformations itself. As far as future teacher generations are concerned, they will have better chances to develop their transformative abilities than the teachers today. However, continual professional growth of those teachers whose education has been insufficient, must be taken care of by continuing education or in-service training. A cause for concern, in particular, is the fact that in Finnish vocational teacher education there has been little room for considering problems related to school organizations. The first task here would be to analyze the essence of school organization, to become aware of the school code and its meaning, as well as to recognize the systemic nature of school organization (everything affects everything) and the latent effects hidden in it.

Another important skill is that of communicative reflection (Mezirow, 1990), i.e. the skill to analyze and interpret what others say, or their value expressions and the skill to relate these interpretations with one's own views. This is a prerequisite for solving conflicts and reaching mutual understanding.

The third important ability is to take an investigative approach to school's pedagogical development. This means the skill to recognize the essential problems, and commitment to solving these problems, critical analysis of the leading principles behind the functions and situations, as well as transformative development along the lines of action research. Engeström (1987) has constructed a Finnish version of action research on the basis of expansive learning, i.e. developing work research. This approach focuses on continuous transformative development of a functional organization (e.g. school) by means of picking out the basic components of the inconsistencies within and between its units.

Continuing education for teachers seems to become more purposeful and more persistent. By means of programs of sufficient length teachers who have been frustrated in school work can be guided on the path of transformative development. One example of this could be the Professional Development -training, which has been launched also in Finland. It is based on transformative development projects with an investigative approach around which individual study programs are tailored for individual students or student groups (a school or department), according to their interests.

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STATIC AND DYNAMIC DIMENSIONS OF THE VOCATIONAL TEACHER EDUCATION CURRICULUM

Ulla Mutka - Hannele Rousi

ABSTRACT

Societal changes in vocational teacher education can be seen as three distinct phases of curricular thinking. Performance-based curricula regarded society and vocations static and all students sharing the same educational needs. The process-oriented education has traces of humanism and cognitive learning theories. Besides individualism this approach stresses collaboration and interaction. Project-oriented education believes in teacher qualifications which seek to develop students' own environment of daily activities. Competence-based exams recognize lifelong learning, diverse learning sources and individual study paths even more clearly as potential ways to achieve teacher qualifications. Curricula can form a basis for multidimensional social and vocational creativity, building on the conscious, wide-based development of individual and collaborative skills.

Descriptors: *vocational teacher education, curriculum, process-oriented education, project-based education, competence-based examination*

INTRODUCTION

In vocational teacher education, curriculum development and many forms that education is implemented are based on the way the central issues of the era are seen and interpreted. The main idea is then to continuously observe what is happening in society, how the vocational reality is changing and what kind of views there are on knowledge, learning and learners (Rousi, 1991). From this viewpoint the function of a curriculum is to bring up and highlight essential themes and topics for teacher education and to facilitate learning processes of high quality.

The current changes have a direct impact on vocational teacher education, which also means frequent new and interesting challenges. A closer look at the recent history of vocational teacher education reveals that the change process consists of three[1] quite distinct phases of curricula and education (see Figure 1). These phases also represent different periods in the history of education, through which we can enrich and broaden our awareness of the various ways to implement vocational teacher education.

PRACTICES IN SOCIETY

DYNAMIC

National control system of curriculum planning based on many-sided expertise and common, well-proven principles and solutions

Assessment and diploma requirements are based on national agreements and instructions.

Curriculum planning is guided by ad hoc needs and situations.

Curriculum takes the approach of subjective rights and individual study paths.

Curriculum is a discussion paper which brings up different points of view. Diplomas?

LEARNER GUIDED BY TRADITION ——— SELF-DIRECTIVE LEARNER ———> LEARNER DOING CONTINUAL IDENTITY WORK

Curriculum at first only in the Master's mind, later tightly structured, norm-defined and centralized curriculum practice.

Diploma requirements related to partitioned, quantitative criteria.

The objectives and learning practices agreed upon between learners.

Diplomas are not essential - changing the world through increasing awareness is.

STATIC

Figure 1. *Different Approaches to Curriculum Practices*

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[1] The fourth curricular phase described in the upper right corner of the Figure 1 characterizes, for its part, the already perceivable future of vocational training, which is related to rapid changes and altering educational needs

THE ERA OF PERFORMANCE-BASED CURRICULUM

Characteristic of this era were the very centralized functional systems and the norm-based control that took place in many levels and went even into details. According to assumptions underlying this kind of system, society and vocations were static and all students shared the same educational needs. From this perspective the world seemed uniform in many respects, and it was considered to change very slowly.

This type of thinking concentrated primarily on learning of skills which could be externally observed and measured. The concepts of knowledge, skills and their learning derived mainly from the behavioristic learning theory. The main focus of teaching was on producing, modifying and reinforcing behavior that could be observed from the outside. Ideally, the things to be learnt were defined, acquired and assessed separately and in detail. Teaching was regarded as a technique that could be used by proceeding from one subskill to another. The goals were defined as clearly and unambiguously as possible. On the way to these goals teaching or learning instruction was founded on reinforcement of appropriate behavioral traits by means of positive feedback.

Curricula formed the basis for assessing the efforts of students and their instructors. The courses in the study plan and following them conscientiously were absolute norms for both. In the course plans the emphasis was put on the objectives and on strict control of attaining them. Educational programmes were set up within carefully defined frames of time and location. The effectiveness of education was determined by the extent to which the students were able to adopt, in a given time, the detailed contents of curricula provided by the central government.

THE ERA OF PROCESS-ORIENTED TRAINING

The shift to process-oriented training in teacher education has taken place gradually with years. This development, for its part, has anticipated and promoted a new way of thinking concerning curriculum and education in practice. Nowadays, the national guidelines for curriculum planning do not state absolute norms but only offer referential possibilities content-wise for the implementation of teacher education. Students' individual needs for learning and development make up the central guidelines and attributes for the process. Individual study plans have become increasingly significant.

In the background of process-oriented education, there are traces of the humanistic conception of a human being and cognitive theories of learning. Here, a learner is seen clearly as an internally directed, active agent who seeks interaction. This kind of education emphasizes that processes go on through phases, that a reflective approach by students is important, and that events are parts of the course of history. Growth to teacher's profession advances in a spiral-like fashion during the education as a broad-based dialogue between one's own world of experiences and the theoretical world related to the vocational field (Rousi, 1991). In different stages of the learning process autonomy, creativity and self-confidence, i.e. awareness and responsibility for one's own learning, develop through active and reflective approach of participants. The capability for realistic self-evaluation of one's own learning process is important for the development of reflectivity.

In contrast with the performance-oriented phase, the focus of instruction has clearly shifted from traditional teaching to tutoring learning processes. Along with this thinking also the strict frames of time and place have been loosened to serve students' individual needs. Besides emphasizing individualism the process-oriented approach has committed to growth into collectivism and interaction. Issues related to teacher's work and personal development have been discussed a lot between students, and with instructors in the college and in training schools. In process-oriented education the curriculum gets its ultimate interpretation and implementation forms in interactive situations where it is possible to question, evaluate and reflect on general matters of vocational education and how they relate to one's own field, to its specific questions and to one's own professional development.

THE ERA OF PROJECT-BASED EDUCATION AND COMPETENCE-BASED EXAMS

From the curriculum point of view not only knowledge itself but also sources and facilities for learning have expanded enormously in recent years. Services based on information technology and telematic connections offer diverse possibilities when planning and guiding learning processes. Increasing international contacts open almost endless learning opportunities and networks. However, to benefit from these extensive networks the activities need to be flexible and efficient. The globalization of the world has given a start to societal and cultural transition, where traditional forms of institutions and organizational borderlines are called in question. This has also made us more aware of the importance of global responsibility and high ethics in our activities.

For curricular work, this development has meant a very conscious choice to include international activities and principles of sustainable development into educational programmes. Learning environments have also changed considerably: versatile networking schemes and new sources for learning are now widely applied when planning and setting up vocational teacher education.

At the Vocational Teachers Training College of Jyväskylä, project working has been used earlier in a small scale to provide basic pedagogical teacher education, but since 1993 all teacher education has been based on phased learning including projects. This is partly due to the economic realities, partly result from the internal development of the College.

There are two different models of teacher education programmes from which the students can choose. The first alternative is directed for those students who base their individual study plans on the time frame of one academic year. The students work in teams comprised of students and instructors, which gives better opportunities for more continual interaction and closer guidance or support to learning than in the other alternative. In addition to contact weeks, the study program includes autonomous distance periods and individually flexible teaching practice periods of various lengths.

The other alternative is designed for those who pursue their studies in addition to work, for example, following their individual study plans and preferring more flexible time frames. This model requires the students a lot of independent work and personal responsibility for the course of studies. The educational programme comprises short contact periods together, various teaching practice projects as well as guided and independent studies. Individual study plans and schedules can be extended to cover multiple study terms according to one's interests, career or life plans, or teaching assignment. Project-oriented, modern life presents also a challenge of project-based education and related competence-based examinations.

Although the line between process- and project-oriented education is vague, there are some differences of emphasis in practice. The implementation of the latter kind of study programme described above leans more clearly on the ideas of project-orientation. In this model, teacher education is no longer as closely connected to its traditional spheres of activities, ie. to the institutes for higher education, training schools, other students or instructors. This kind of project work can focus instead, e.g. on the development of one's own vocation, work or work community through educational solutions. Then it is only natural that the target group and learning experiences of the development project are also found from those areas.

Project-oriented education includes a broader interpretation of teacher qualifications which specifically seeks to develop each student's own environment of daily activities on the practical level. In the background of the design of this model is the notion that sources and possibilities for learning are now really manifold. This means that the forms of education need not be institutionalized in the traditional fashion. Learning can take place in many different ways and in various situations. Some people may want closer guidance with their studies, others may prefer more independence. The current situation calls for more versatile interpretation of the concepts of process, commitment, maturity and responsibility; both by the students and their instructors.

The more open the educational structures are, the more essential students' own conscious commitment to education and their own learning processes become. Conscious commitment is crucial for meaningful learning experiences and for the success of the whole education process. Making students' life situation, resources, ambitions and prior knowledge as integral, meaningful parts of their study processes gives a good ground for this kind of conscious, positive commitment.

COMPETENCE-BASED EXAMINATIONS

There is only a slight difference, if any, between the ideas of project-oriented education and competence-based examination, where a student can show his/her teacher qualifications irrespective of the way they have been acquired (Keurulainen, 1993; Miettinen, 1993). Perhaps in the examination thinking lifelong learning, diverse learning sources and individual study paths are recognized even more clearly than in the project-oriented education, as potential ways to achieve teacher qualifications. In any case, the exam-based and other education models have much in common. All these approaches concern either the acquisition or mastery of teacher qualifications. Similarly, regardless of the type of implementation, study plans have to be carefully related to the focal areas of teacher's work. Furthermore, it has to be agreed upon how the achievement of the objectives can be shown and how it is assessed.

Teacher education is self-evidently student-centered, as it is a matter of supporting or assessing the learning processes of students. Active guidance and expertise of instructors are needed, however, to remove obstacles when a student's learning is not proceeding. In the process-oriented model, professional growth is more closely connected to the environments of higher education than in the other models. In those other models the growth processes take place, or in the case of competence-based exams have already taken place, somewhere else than in front of the instructors, although still in contact with them.

CURRICULAR DEVELOPMENT FOR VOCATIONAL TEACHER EDUCATION

In curriculum development, it is crucial that the related discussion is as many-faceted as possible. The pluralism of different opinions and values leads to a systemic and contextual view on learning, where different principles and factors related to learning processes, as well as surrounding societal and vocational realities are in continuous interaction. In other words, this kind of holistic approach links various viewpoints and learning principles to their larger environment.

In curriculum planning, the emphasis on action means a conscious, value-based and responsible approach to the surrounding reality. Without deeds and active influence on things, mere discussion on values and introduction of new aspects remain at the level of a philosophical exercise. Apart from knowledge and action, also the ethical, emotional and aesthetic dimensions are essential for students' capability to develop their own work and take responsibility for themselves and others as well as for the nature, society and culture (Venkula, 1992). Thus, e.g. the following questions are central when developing curricula:

- How to promote learning that would develop extensive, personal visions and abilities to evaluate one's own thinking and actions?

- How to develop learning that would support responsible collaboration for better life and learning?

- How to foster learning that would help to find and use various ways to increase social and global responsibility?

To be able to answer these questions, we must consider how a curriculum can support the development of cultural, social and vocational awareness. We must also consider how a curriculum could best help in becoming aware of those social and cultural obstacles that restrict our capabilities to feel, understand, think and act. Probably to a great extent, it is a matter of permissiveness, open-mindedness and respect for different views. At best, a curriculum can serve as a basis for multidimensional social and vocational creativity, which builds on the conscious, wide-based development of individual and collaborative skills and abilities.

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COMPETENCY-BASED EVALUATION OF THE VOCATIONAL TEACHER QUALIFICATIONS

Harri Keurulainen

ABSTRACT

The structures of society have rapidly changed in Finland during the past decades. The waves of change have been especially drastic in the labour market and occupations. Therefore all vocational education and thus also vocational teacher education are continually facing new challenges, as Mutka and Rousi point out in the previous article. Renewal of contents and methods in vocational education is a continuous process. Evaluation is a crucial part of the learning process, therefore it is significant to develop the philosophy and the methods of evaluation according to new ideas and concepts concerning the nature of learning and knowledge. In this article I will discuss some of the central ideas on which the new competence-based examinations have been built in the Vocational Teacher Education College of Jyväskylä during the past years.

Descriptors: *competence-based examinations, teacher qualifications, evaluation*

The Finnish National Board of Education appointed a committee to renew the foundations of the vocational teacher education curriculum in 1992. According to the committee's proposals it is now possible to certify the uncertified teachers without students' attendance to traditional formal teacher education program. Teachers can now get their certification by merely participating in an evaluation process during which students' competencies are examined.

New paradigms and methods for carrying out evaluation are constantly searched. For example Guba and Lincoln (1989) suggested a few years ago that it is now time for a new approach to evaluation, "fourth generation evaluation", as they called it. The key word characterizing the new approach is "negotiation", while the previous three generations are described with such terms as "measurement", "description" and "judgement".

The beginning of the century was the time of the first generation evaluation: measurement of students' abilities by using various kinds of standardized tests. In the 1920s it became evident that an evaluation approach that could not provide other than student data could not serve the purposes of developing the educational system. The second generation evaluation emerged, an approach that was characterized by description of patterns of students' strengths and weaknesses with respect to certain given objectives. The demand to include judgement in the act of evaluation marked the emergence of the third generation evaluation in the 1960s, but still the evaluation was based on quantitative measurement of students' abilities (ibid.).

The fourth generation evaluation is something, that Guba and Lincoln (ibid.) describe as responsive contructivist evaluation. The term constructivist is used to designate the methodology employed in carrying out evaluation. The evaluation process is interpretative and hermeneutic by nature rather than descriptive and objective, which are the virtues of traditional assessment.

According to these modern ideas, concerning evaluation - and the ones discussed later - the main principles of the evaluation model constructed for competence-based examinations are as follows:

* Evaluation should focus on the core qualifications of vocational teachers work.
* The setting of evaluation should be authentic and the evaluation process should be highly contextualized.
* Evaluation should be a part of the learning process, and the evaluation process itself should facilitate learning.
* Evaluation should require collaboration and all stakeholders should have a possibility to take part in the evaluation process.
* Evaluation should provide a supportive scaffold to develop self-reflective and critical capacities.

A Model for Competence-Based Examinations in the Vocational Teacher Education

The first principle concerning the evaluation model is that evaluation should focus on the core qualifications of vocational teachers work. The above mentioned committee has defined four core qualification areas concerning the vocational teachers' work:

* a qualification area concerning the context of vocational education
* a qualification area concerning the nature of learning

- a qualification area concerning the direction of learning
- a qualification area concerning collaboration and interaction

It is essential, however, to recognise that the definition of qualification areas is problematic. It is also essential that the students themselves set their own goals to the evaluation process in the framework provided by the qualification areas in the curriculum.

In vocational teacher education there are three subjects of evaluation through which the qualification areas are evaluated:

- professional growth,
- professional skills, and
- the thesis

The main task for a student is to carry out a pedagogical development project concerning the development of the student's own work, and the organization of his/her organization. The project may be planned so that the two elements included in the development project should have a strong correlation. The idea behind this dual objective, i.e. individual development and organizational development activity is that evaluation should become a crucial part of the learning process and that the evaluation process itself should facilitate learning.

In attempting to make the setting of evaluation as authentic and the evaluation process as contextualized as possible students' tasks are related to their own work concerning teaching and the development of his or her school or other organization. It is the students' and their organizations' collaborative task to negotiate and define the subject of the development project through which the evaluation of professional skills can be carried out.

The ideas of a competence-based exam are near to those of authentic assessment, which, however, is still an elusive concept, as Dwyer (1993) points out. Wiggins (1989) defines authentic assessment as the performance of exemplary tasks that would be responsive to individual students contexts. The tasks are intended to be similar to those challenges and standards of performance that members of a professional discipline typically face. These tasks tend to be highly contextualized and usually require collaboration and, what is important, facilitate learning. The evaluation of performance requires human judgement, emphasizes both process and product and entails dialogue between all the significant stakeholders of the process. All these characteristics, which Wiggins mentioned, can be considered key elements in carrying out the evaluation.

According to Mitchell (1989) it is important that authentic assessment should consist of performance assessment, which is another concept related to competence-based examination in addition to authentic assessment. Baron (1991) regards performance assessment as a constructed response in which students are actively engaged in solving a realistic problem. The problem may be relatively limited or it may encompass a broad, sustained, loosely structured process dealing with the central ideas in a discipline. In examining the qualification areas concerning vocational teacher's work it is self-evident that the process should be broad enough to contain sufficient evidence upon which evaluation can be based. Therefore it is likely that the examination process will last from about five months to nine months depending on students' abilities.

The evidence for the evaluation of the teacher's professional skills is provided by a development project. Therefore the project should be planned so that it covers all the qualification areas. The evaluation of teachers skills requires collaboration, and different stakeholders having a possibility to take part in the evaluation process. These stakeholders include at least the student's school or other organization and the representatives of working life besides the student and the vocational teacher college.

A scheme for professional development (SPD) is a significant tool in planning, developing and evaluating the development project. The perspective of SPD should not, however, be limited to the project itself. In SPD the project should be connected to such contexts as one's personal professional growth, the development of the discipline and the development of the organization in which the project takes place. Dynamic SPD includes also continuous writing of a "diary" of studies included in the examination process, a portfolio through which the activity is continually evaluated.

The idea of SPD comes close to the concept of a process-portfolio presented by Wolf (1993). He states that a process-portfolio constitutes four significant characteristics:

* the concept of assessment as a part of a larger episode of learning
* the creation of a portfolio culture
* the scaffolding of reflective and critical capacities
* the inclusion of reflection and response as part of what assessment should examine.

SPD also provides the main evidence for the evaluation of the student's professional growth. SPD can be seen as a significant tool in developing the ability of self-reflection, and with the dialogue included in the evaluation process it is possible to provide a supportive scaffold to develop self-reflective and critical capabilities. Thus, in the evaluation of the student's professional growth, the role of self-evaluation gradually becomes greater during the examination process.

The third source of evidence in evaluating the teacher's competencies - besides the activity included in one's development project and the SPD - is the thesis. It is a written document of the theoretical foundations concerning the activities carried out during the development project. It should contain the student's substantiated views on change in working life, occupations and vocational skills needed as a part of social change and as challenges to vocational education. The thesis should also contain the student's argumentation on the nature of knowledge and learning as foundations of the pedagogical approach through which the challenges can be faced.

I shall conclude with the following figure in which I will point out the relations between the main components in the evaluation process of the competence-based examination of teacher qualifications discussed above.

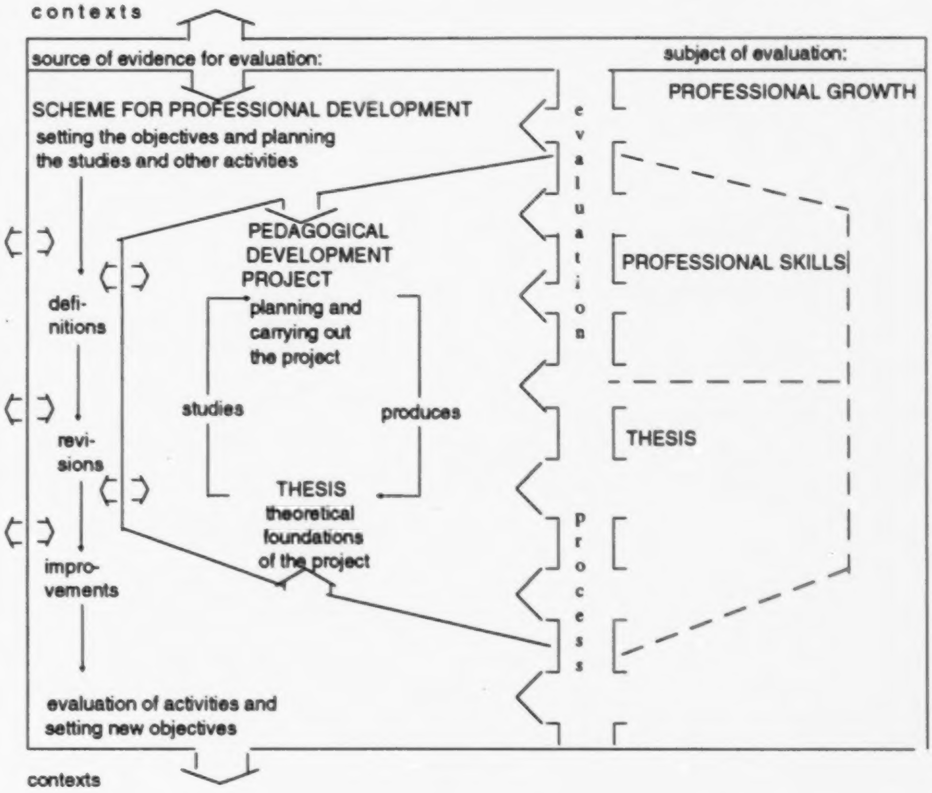
contexts
source of evidence for evaluation:
subject of evaluation:
SCHEME FOR PROFESSIONAL DEVELOPMENT
setting the objectives and planning the studies and other activities
definitions
revisions
improvements
evaluation of activities and setting new objectives
PEDAGOGICAL DEVELOPMENT PROJECT
planning and carrying out the project
studies
produces
THESIS
theoretical foundations of the project
evaluation process
PROFESSIONAL GROWTH
PROFESSIONAL SKILLS
THESIS
contexts

Figure 1. A Model for Competence-based Examination in the Evaluation of Vocational Teacher Qualifications

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EDUCATIONAL TECHNOLOGY AT VOCATIONAL SCHOOLS

Peppi Taalas

ABSTRACT

Vocational education has commonly included the required technological skills needed in the production processes and provided simulated training situations, but the use of computers for learning enhancement is uncommon. Technology is an inseparable component of the vocational subjects whereas the general subjects are often left in a technological void. The use of computers in general subjects (in this case the English language) is examined in a survey carried out in the Finnish vocational schools and commercial colleges. The results show that the current use is regulated by the vocational orientation of the curricula and the technology as well as the staff-development resources are used accordingly. This leads to a discrepancy between the goals of education, and the actual classroom practices in the general subjects.
Descriptors: *vocational education, educational change, behaviorism, constructivism, educational computing, technology implementation*

MOTIVATION FOR COMPUTER USE IN EDUCATION

One of the school's main roles has traditionally been preparing the students for the society by giving them the functional abilities which the society expects and in some cases requires of its adult members. Computers along with the new information technology have an ever increasing role in the modern society. Information has to be sought actively using the technology as the citizens are expected to undertake more responsibility for keeping themselves abreast with the changes in the society and the societal requirements.

Vocational education has, in addition to the traditional role, the task of educating skilled workers in accordance to the changing needs of the labor market. Manufacturing jobs will go through a radical change as new jobs are created. According to Imel (1994) technology has eliminated many low-level jobs and increased the skill level required for the remaining jobs. Imel also points out that the flexible production in manufacturing and services requires workers with a wide range of new skills and capabilities. These new skills include an efficient and diversified ability to use the information technologies. This in turn demands wider conceptions of the use of technology in vocational education. Acquirement of technological competence concerning a production process will not suffice, a flexible and creative understanding and use of the potential of technology is also essential. The teaching methods in vocational education should consequently include a diverse and modern use of technology in a dynamic manner.

From the labor market perspective the OECD Centre for Educational Research and Innovation (CERI) names the new information technologies as a real challenge for education, especially in the sense of the changing labor market and the effect it will have on the requirements on education. The growth in economies within OECD is not likely to occur in the traditional sectors at such a rate that it would compensate "the attendant displacement". Structural unemployment will become a reality and the need for retraining will grow. The training must be responsive to the changing needs guided by the changing technologies. Therefore education has to include the new information technologies in all learning and in that way free them from the boundaries set by the "machine power" approach and its consequent constraints to the "pedagogical power".

From a societal viewpoint the ability to use technology is crucially important. Hawkridge (1990) motivates the introduction of computers into schools with six rationales, which should be taken into account when deciding for or against a wider use of computers in education:

1. The Social Rationale
Since schools prepare students for life they should prepare the students to deal with computers, too. Computer literacy[1], at least to some extent, is to be promoted as well as literacy and numeracy.

2. The Vocational Rationale
The knowledge of using various applications (and of programming) will be of an advantage for students in their future jobs.

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[1] The term computer literacy presently constitutes the notion of computer competence. When the term was first introduced in the 1970's it was used about "persons who could write computer programs" or even about persons "who could compute" in the world's earlier meaning "calculate" (Nevison, 1976). The term was gradually extended to include people that could "do computing" (Leuhman cited in Douglas, 1980). Concomitantly the term functional computer literacy (Longstreet and Sorant, 1985) started to gain foothold in the field of educational computing and notions of the computer as a pedagogic coveyor or as a tool and a resource (Levin and Souviney, 1983) were developed.

3. The Pedagogical Rationale
Improved teaching and learning through computer assisted learning. The idea of "computers across the curriculum" should be supported.

4. The Catalytic Rationale
Teaching, administrative and managerial efficiency improves, desired change in education occurs. An Utopian future for education.

5. The Information Technology Industry Rationale
A market-driven rationale under the guise of serving national interest.

6. The Cost-Effectiveness Rationale
This has very little support but the advocates argue that computers could substantially replace teachers. This rationale as well as its proponents forget the social and humanistic roles of the school which the society today takes for granted and relies upon.

The last two rationales (5 & 6) do not have support in education. The last rationale (6), the cost-effectiveness rationale, corroborates the concern of some teachers about computers replacing teachers. This rationale, however, relates in the first place to corporate training in the form of e.g. intelligent tutoring systems.

Pelgrum and Plomp (1993) distinguish an additional rationale which was especially topical in the beginning of the 1980s when computers had been introduced to some schools: the *opportunistic rationale* which embodies the prospect of attracting more students to schools with the use of computers in the classroom practices. This rationale will most likely become topical again as education is becoming more and more a service product which will be steered by various quality factors and indicators. An indicator of quality could well be a modern, dynamic use of technology across the curriculum.

Anderson and Collis (1993) point yet to another rationale: the *functionality rationale*. This popular rationale today refers to the use of computers in a functional way: the students have an access to computers during the various learning tasks they are involved in, e.g. word processors for writing, spread sheets and database programs for data handling.

THEORETICAL ASPECTS OF COMPUTER USE IN EDUCATION

Even though the theoretical focus of computer education has shifted from *learning about computers* to *learning with computers*, the areas of actual use and practice have remained largely unchanged (Cuban, 1990). The current use still relies heavily on the traditional behaviorist view of learning.

The behaviorist theory builds on the idea of segmented knowledge, the learning of which can be reinforced by repetition. The idea is to tell the learner whether the answer is correct or not, and in that way promote learning. The stimulus-feedback-loop re-presents the exercise until the answer is correct, and then moves on to more difficult exercises, which build on the previously learned elements. This approach has had an immense influence on the design of instruction technology and computer software. The computer in this context is a tireless repetition machine which is capable of individualized content and pace. The behaviorist theory was refined upon by Gagne (1968) idea of an emphasis on intellectual skills such as problem solving. He introduced a technology of hierarchical task analysis for sequencing the intellectual skills on the basis of lower level skills already possessed by the learner.

The behaviorist approach to educational computing and educational computer programs is specified as *instructional design* or *instructional approach*. This model of use is excellent for some areas of learning, and can well be used for repetition and training. If, however, the computer supported learning environment involves the use of these kind of programs only the potential of the computer, as well as the learner and the teacher, are left underemployed.

The instructional design approach has for a long time been challenged by the cognitive revolution (Putnam, Lampert & Peterson, 1990). Some of the instructional technologists claim that the assumptions and principles in both theories are consistent with each other at least to some extent (Merrill, 1991). Nevertheless, there is a difference in the understanding of knowledge (as a mental model) and of the mediating processes. From the constructivist point of view teaching enhances the learners ability to build his unique mental structures which in turn make learning possible while the instructivists urge that instead of the mental structures, the content or the semantics are unique (Merrill, 1991).

This leads to a different emphasis in the learning situation. The instructional learning situation consists of objective descriptions of an instructional sequence, whereas for a constructivist learning situation the theory of learning (i.e. the cognitive theory) is the basis, and the methods are used in agreement with it (Duffy & Jonassen, 1991).

Shuell (1986) states the difference as being in the focus of learning. Behaviorist approaches focus on changing the environment in order to influence learning (e.g. reinforcing correct response), whereas the cognitive approaches focus more on the changing the learner (e.g. by encouraging positive and appropriate learning strategies). Scott, Cole and Engel (1992) introduce a new term *cultural constructivism* to elaborate on the fact that in contrast to Piagetian learning theory - the basis for the constructivist theory - their approach assumes not only an active child but an equally active adult learner. Cultural constructivism moreover emphasizes that all human activity is mediated by cultural artifacts, which have been constructed over the course of history.

EDUCATIONAL CHANGE

Although the number of computers in the society has risen dramatically, there has not been a noticeable change in the number of teachers actual use of microcomputers in teaching (Winnans & Brown, 1992). Teachers ambivalent attitude towards computers has in some studies been noted to be less favorable than the general publics attitude (Dupagne & Krendl, 1992).

Cohen (1987) argues that schools and the nature of teaching have remained substantially the same for seven hundred years, and there exists in the popular mind a very conservative conception of schools and what they are like. Hodas (1993) claims that this is a crucial point to technology implementation in schools. According to Hodas, the schools themselves are conservative, hyper-hierarchical organizations which perceive the technologists promise as a threat and a disruption of routine. Milstein (1976) justifies the prolonged process of change by explaining that educational policy making is a complex process partly because there are so many instances participating in it, but also because policy enforcing is a gradual, non-neutral, divergent process with different stages preceding implementation.

A change is at least literally easiest to implement if it is a set of materials only. A greater difficulty is presented if the use of the materials means learning and employing a new teaching approach or style. Even more difficult is the situation if a change in beliefs has to occur. According to Fullan (1982, pp. 34-35) these beliefs are often not explicit, discussed or comprehended, but rather are buried at the level of unstated assumptions. He emphasizes that a change cannot happen unless the teachers understand themselves and are understood by others. In spite of the fact that teachers are on the receiving end of new policy and program directions, the individual teachers can become more capable of assessing, and even influencing, whether the necessary prerequisites exist for coping with the change.

Staff development is certainly not the only way to promote change as far as the use of technology in education is concerned, it is also the responsibility of the teacher education organizations. As it has been ascertained many times, people have a tendency to teach the way they have been taught to teach, and the way they themselves have been taught. If teacher trainees get used to utilizing computers and the communication networks during the teacher training they will have an idea of what they are, and they will have something for future reference. There will be more and more technology in the society in the future, teachers cannot afford to be the ones who do not know how to avail themselves of them.

Teachers role is vitally important as the prevailing attitude favors computerized schools and technology investments. The school reform and the technology initiatives are being adjoined (Collins, 1991). This development has nevertheless not brought about the desired shift from teacher-directed transmission approaches toward student-centered approaches that would emphasize the social and cognitive construction of knowledge. Carey (1993) points out that the evaluation of the implementation outcomes has mostly been restricted to quantitative approaches, measuring the number of machines and hours of student use. This kind of evaluation produces overtly optimistic assumptions which do not account for the teacher participation and attitude.

The technological break-throughs and the availability of computers will not as such change teachers' approaches to teaching and learning. Computer assisted education can promote change only if it incorporates a new vision of the learner and the teacher.

An influential factor for willingness to adapt the new technologies may lie in the nature of the objectives of education. For instance, an acquired understanding of decision support and the expert systems software in commercial colleges has proven to enhance the students' value for the future employer (Klein, Cerullo & Cerullo, 1992).

COMPUTERS IN EDUCATION IN FINLAND

In 1984 the National Boards of General and Vocational Education in Finland initiated a substantial technology project "Computers in Education" (TOP2) to promote the use of computers in vocational as well as comprehensive schools. The objectives for the project were set as follows:

I. to prepare students as active and critical architects of the modern information society

II. to help the educational establishment to meet the new societal requirements by developing the content of education

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[2] Tietokone opetuksessa projekti

This process was supported by a strategy for implementation of computers in education. The goals of the strategy were to develop Computer Education courses in schools and to develop schools with the help of computers. The actual operation included curriculum development; schooling key persons to support the implementation process on all the levels of policy making; educational software development; technological enhancement of teacher education; and structuring consulting and support systems. The progress reports were studied in 1989, and the central problem areas were summarized. These problems included the unplanned staff-development, the concentrated use of computers in the vocational subjects only, and the diversified quality and quantity of the available technology.

The project has succeeded in initiating the implementation process in the Finnish schools. Everything that has been accomplished has been of value for the future development, and the project will become established as an independent part of the educational system or become affiliated to a national governing body.

Computer-Assisted Instruction among English Teachers in Vocational Institutions

A survey was conducted in the Finnish vocational schools and commercial colleges to examine the present use of computers, the factors behind the use or non-use, the barriers of use and the current stages of implementation process in the schools (Taalas, 1995). The focus was also on staff development, the pedagogic ideas the teachers have along with the possible changes in their roles in the teaching situation. Data were collected using a questionnaire which was sent to all the English teachers in the vocational schools and commercial colleges. The results give a reliable representation of the current situation since 201 teachers (70 % of all the teachers) participated in the study.

On the basis of the results it can be said that the idea of using computers to enhance learning is slow in gaining a foothold in vocational education. The emphasis of the computer use is clearly on the production skills and on the new open and flexible learning environments, but as a means for structural reform mostly. Almost all of the teachers used computers for administrative and private purposes at least infrequently, but the use of computers in the classroom practices was considerably lower. Weekly or daily educational use was reported by 18 teachers (9 %) and weekly or daily private/administrative use by over a half of all the teachers, 57 % (n=115). The teachers educational use of computers was analyzed in relation to the learning approach. A rough division was made between behaviorist computer use and constructivist computer use on the basis of the nature of the given assigments. The use was considered behaviorist in 65 % of the cases and constructivist in 35 % of the cases. The behaviorist activities included mainly drill-and-practice programs and cloze excercises. Constructivist activities involved process writing, desktop publishing and presentations, business correspondence, and language simulations.

As many as 132 (66.7 %) teachers stated the organisational factors (i.e access to computers) as the main barrier to frequent educational computer use. Teachers of general subjects could use the computer facilities randomly only when the facilities were not being used for technical training. Other reasons the teachers stated included:

A. lack of motivation (43 teachers, 21.7 %). These teachers could not link the computer use in relation to the learning outcome.

B. inadequate skills and knowledge (14 teachers, 7.0 %). These teachers expressed an eagerness to use computers with their students but did not know how to do so.

Only six teachers (3.0 %) stated that their computer use is as frequent as they desired it to be. In general, the reasons for non-use for the female teachers were 10% more motivation-related than for the male teachers, who stated the organisational factors as the main reason.

A shared complaint among the non-computer using and infrequently computer using teachers was the poor quality and small range of educational software. This supported the previously mentioned conclusion that the teachers still emphasized solo-learning with the help of a tireless trainer, namely the computer, to practice specific tasks. Teachers seemed to have little time for adapting the available programs to suit the needs better or to plan lessons where students prepare exercises for one another. The lack of tools for the assessment of learning outcomes was a concern for many of the teachers.

Very little attempt was made to create computer assisted learning environments where the computer was used for storing and retrieving information, data communications, writing and revising, simulations or presentations. This in turn supported the assumption that the given computer courses did not give impetus to such thinking and did not provide the teachers with adequate support to initiate such lesson practices.

The fact that vocational education should prepare the students to be flexible and skilled workers on the changing labor market did not affect the English teachers computer use in the classroom. Teachers stated that one reason for not using the computer was that it was so widely used in other subjects and the students were tired of them.

The new telecommunication networks (such as the Internet) are important information channels for the working life. The schools, however, had very few possibilities of using this new technology in education and thus allowing the students to adapt to these new technologies. The reason for this was the antiquated or non-existent equipment in the schools, and problems with access to the Internet. Many schools have administrative connections only to the Finnish systems (Infotel and Telesampo) and the connections as well as the gateways to the X.400 networks are expensive and unfunctional.

Despite the fact that teachers are generally considered the most influential change agents, the teachers in this study could not be blamed for the low level of implementation since the support from the schools administration seemed to be nonexistent. It was difficult to distinguish any even vague policies for the implementation in the schools in general subjects. There seemed to be no staff-development programs as far as computers are concerned, since the courses the teachers have attended seemed rather arbitrary (courses in BASIC programming, Local Area Networks, WordPerfect, MS-DOS). The vocational orientation of the curricula dominated the use of staff development resources. The teachers of general subjects (languages in this case) did not express a need for teaching a computer-assisted-learning course or an educational technology course to language teachers.

FUTURE PROSPECTS

The schools in Finland are going through a significant change as the centralized authority (the National Board of Education) delegates to the individual schools increased liberty to design their own curricula. This change can mean a boost in the use of computers in education. Most likely, however, the schools that have favored educational computing will be the ones promoting the implementation further with the new freedom and the schools that have been technology negative will continue to be so. In the worst case, the gap between these schools will become wider.

Another curricular change in the vocational schools is the rearrangement of the general subjects in terms of making only the basic language courses compulsory. This means more freedom of choice for the students and a hardening fight for the students for the teachers. The situation demands new methods of teaching and more captivating classroom practices. The use of information technology offers one possibility, but only if the teachers will be allowed to develop the needed skills and abilities.

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EDUCATION THROUGH TELECOMMUNICATIONS

Matti Suonperä

ABSTRACT

Some estimations put forward by representatives of industry and commerce suggest that a change in working culture is the most important feature when reorganizing working life during this decade. To attain this goal we need to educate people in the long term. Young people should be guided to active participation, motivated by personal interests, flexibility, independence and freedom of choice. During their education they should have the possibility of engaging in multidimensional communication and co-operation. This is important because the new concept of work offers opportunities for independent working, for setting common goals and for decision-making. Therefore we are moving from conventional classroom teaching to distance education. The new teaching strategies support students' self-managed learning, tuition which is independent of time and place and provides means for self-assessment and analysis of one's own learning. This is the pedagogical basis for developing telecommunication technologies in education. Teletechnology offers a variety of means for communication suited for educational purposes. New pedagogical opportunities arise. Personal contacts and information networks make it easier to find essential knowledge. Planning becomes more effective, because the new information is always available. A good solution is achieved if the learner has many different communication channels available.

Descriptors: *telecommunications-based education, improving education, self-management, time and place independence, accessibility, learning center*

INTRODUCTION

Learning professional skills is a part of human beings' development process which links individuals to the surrounding society. Some estimations put forward by representatives of industry and commerce suggest that the change in working culture is the most important feature when reorganizing the working life during this decade. We may even call it the cultural revolution of working life. To attain this we need to educate people in the long term. Young people should be directed to active participation, motivated by personal interests, flexibility, independence and freedom of choice. During their education they should have the possibility of applying multidimensional communication and co-operation. This is important because the new concept of work offers possibilities to independent working, to setting common goals and to decision-making. The new concept of work includes a variety of actions, planning, decision-making, organizing and supervision. It provides possibilities to a creative organization of all actions, gives opportunities to learn new things and to a new kind of tutoring supporting both actions and learning. Therefore we are moving from conventional classroom teaching to a combination of distant and classroom tuition. The new teaching strategies must support students' self-managed learning, tuition which is independent of time and place and provides means for self-assessment and analysis of learning. They are the pedagogical basis for developing telecommunication technologies for education.

The traditional teaching methods have proved inadequate. There is a great need for personal growth, co-operation, flexibility, effectiveness and self-management in learning. It is important to remember that personal experiences and common thinking based on them do not guarantee the required understanding of the phenomena. We need analysis and synthesis based on theoretical knowledge. Therefore the primary method of education cannot be based only on describing and categorizing phenomena. The education must create learning processes which produce understanding of phenomena and enables practical applications. Many researchers (Dewey, 1957; Engeström, 1987; Fichtner, 1984) have shown that learning in schools is closer to learning the material used than learning the phenomena of reality.

The structure of education and the stability of action have created learning methods which only enable coping with actual learning situations. Marton et.al. (1983) discovered that students tend to set goals which imply just passing the tests. The knowledge acquired does not necessarily meet the needs of the society and has a very low value of application. Therefore education should emphasize the social value of knowledge and its importance for the learners.

The modern viewpoint of learning emphasizes the importance of active and self-managed learning. This is the case in adult education and in-service training followed also by basic education. Efforts are made to create a learning situation unlimited by time or place, but enabling learning during leisure or work. Different educational institutions and databanks can offer their help to attain this goal. Multidimensional learning has proved its value also to those used to conventional classroom teaching. The possibilities offered by the continuously developing telecommunication technologies have helped strongly to reform education. Learning has become more personal, co-operative, flexible and more effective. The new means of telecommunication have enabled an interactive education free from time and place.

Telecommunication offers mainly two kinds of possibilities to renew education. Firstly, the educational interaction between institutionalized education and society is becoming wider and deeper. In other words, the interaction between the theory of knowledge and the application in reality is becoming continuous and firm. Secondly, the form of interaction between teacher and student can be changed. Goodlad (1983a,b), in his wide research, has come to a conclusion that teachers are mainly teaching the themes of the textbooks used. Therefore educational interaction in traditional schools is mastered by material objectives instead of actual needs of knowledge. Goodlad has a good reason to ask: "Are we losing our touch to the world of real objects and phenomena?" The nature of educational interaction remains the same as long as education sticks to traditional classroom work. The educational activities must be changed to be more purposeful. Education today still seems to be just a means of delivering information. Teaching must become more supportive and contain more tutoring. Teaching must help learners to identify the reality and to create a personal view of it.

These changes clarify the relationship between theory and practice. Teaching must guide the search of knowledge to proceed from observation to experience and ending in concepts through understanding. The theoretical concepts of a learner will guide his or her observations and the new knowledge acquired will complete the original theory. First of all, teaching and learning are based on purposeful observations and realistic concepts. This is the essential condition to all meaningful learning.

THE PEDAGOGICAL POSSIBILITIES OFFERED BY TELECOMMUNICATION

The facility of integration is a typical feature of telecommunication. The complexity of telecommunication, the knowledge and understanding of its basis require a multi-disciplinary approach. However, the recent development has made it interactive and easy to use. In other words, it suits perfectly for educational purposes.

Working in an environment filled with telecommunication technology does not require from the users any specific knowledge about the complexity and construction of the input. The users must, however, understand the principles of application.

Teletechnology offers a variety of means for communication suited for education. New pedagogical opportunities arise. Information retrieval is becoming faster and widely accessible all over the world. Personal contacts and information networks facilitate finding the essential knowledge. Planning becomes more effective, because the new information is always available. Planning can be carried out independently according to each person's own schedule. Pedagogical planning is also facilitated by the reception of new material by phone, telefax or personal computer. Teaching is independent of time and place, because all services are available at any time. The same concerns inquiries, feedback and consumer contacts. Telephones and personal computers make that possible. Teaching services are more easily obtainable through data registers, programs, devices and networks. The co-operation in using of registers, programs and networks and the sharing of costs is made possible by personal computers and modems.

DEMANDS FOR IMPROVING EDUCATION

From Teaching to Tutoring and Learning

From the viewpoint of teaching, experiential learning is based on logical levels of the learner's activities. Dilts (1990) defines them as follows:

- identity
- values and beliefs
- strategies of action
- specific behavior and
- possibilities provided by environment.

These system-theoretically defined logical levels of action (which also form a basis for NLP, neuro-linguistic programming) help define the learner as an entity guided by his or her identity, who demands a comprehensive pedagogical approach from education.

The learning process means reorganizing the learner's own thinking and behavior from problem centered inquiry to adopting views and ways of actions of reality. In this teaching-learning process a teacher becomes a tutor and a consultant guide. Therefore in teaching the emphasis is on the importance of the creation of purposeful experience and learning situations, guidance to observation and analysis of experience through pedagogical dialogue. Self-management is stressed in learning activities and result assessment. Self-management is based on internal motivation, planning, self-confidence, initiative, creativity, flexibility and self-assessment (see Koro, 1993). Primarily, learners are themselves responsible for learning, though tutors carry their own responsibility, too.

Self-managed learning is based on purposeful orientation and the learner's personal activity which rises from motivation. The energy needed in the learning process is created by the fact that a learner feels personal interest in the subject to be learned. Realizing and understanding the meanings are conditions for becoming aware of the usefulness of knowledge and for the expectations for the future applications. It is equally important to develop the learner's abilities of self-assessment of learning process and its profitability. The improvement of the quality of teaching means creating learning situations with less control and more self-management to facilitate different kinds of self-assessment methods. Self-managed learning also means developing a personal learning strategy. The aim is on one hand to develop task orientation concerning the substance of learning and on the other hand to optimize tutoring which supports the understanding of tasks. High technology and methodology is needed in the co-ordination of these actions. The traditional teacher has to step into the new role of a tutor.

There are several reasons, based on experience and research, why learning needs tutoring. Only a few people are able to learn something new just on their own. An interaction with other people is a starting point for the construction of new knowledge. Tutoring helps to develop learning strategies and structure knowledge to become logically well integrated entities. Tuition is grounded on interaction between the tutor and the learner. The nature and the quality of interaction is determined by the personal relationships. Interaction furthers learning on one hand by knowing the context of the substance and by using understandable and common language. On the other hand, the productivity of communication depends on psychological elements, such as how equal, empathic and sincere the participants are, and what the level of experience is.

It is of primarly importance that the interaction between the tutor and the learner is firm. It is at least as significant that they speak the same language concerning the substance, based on an equal level of experience. Success requires interaction: discussion between a tutor and a learner or learners, where opinions are shared like in a didactic conversation. This means that tutors and learners are using a common language which originates from joint learning experiences, talking about observation, processing information, comprehending, remembering and giving feed-back.

An essential feature in this open interaction is listening. It requires an empathic attitude to others' experiences, without which it is impossible to give accurate feedback. To improve skills in interaction to the stage of discreet guidance we have to have self-knowledge and profound understanding of human relationships, and furthermore practical knowledge of the components in interaction and own experiences of adapting them.

The tutor has to realize the life-situation that is relevant to learning in adulthood. Difficulties are caused by the possible integration of theoretical knowledge and practical experiences. Because of former negative experiences, adults are not used to perceiving the given information through their own views. The role expectations and the willingness to apply knowledge are creating such a motivational ground for adult learners that good interaction between theory and practice can be shown by experienced tutoring.

It is almost equally difficult to guide learners to forget formal thinking and negative attitudes towards studying. In this situation the tutor has a hard task, as deeply rooted habits do not disappear in a moment. Tutoring adults as learners should be clear and simplified. The learner has to be offered enough many-sided points of view to consider phenomena and their connections. There must be possibilities to generalize beyond practical occasions. Many adults have incorrect studying and working methods, based on earlier experiences. They can be changed in the course of time by purposeful tutoring and using working methods better suited for adult education. Behind all this, there has to be a well-designed evaluation system, whose results form the basis to establish the effect of the development.

Action

In tutored learning (see Collins et al., 1989) the learning process begins when the tutor shows the task and practical models for it. That is how the learner is able to form a general idea of the problem. It is significant to assure the concreteness of the internal thinking process. The tutor guides and gives feedback, or when this is insufficient, completes the difficult step. As time goes on and the learner copes independently with the task, the need for a tutor and tutoring gets less.

The actual learning discussion includes the presentation of the knowledge and its reflection. These give the learner a chance to analyze his own problem solving and to gain strategic insights. It also gives the impulse to guide the learning. This happens when the learner compares his own problem solving with somebody elses or with the internal structure of the task. The idea of this action is that now the process of problem solving comes under study. Expressing knowledge implies an event when the learner is trying to justify the choice of a strategy in problem solving and explains his understanding to fellow learners or to a tutor. With the help of experimental activities the learner learns new techniques of information retrieval and learning strategies. At the same time the learner builds his own style of problem solving. Learning is about how to form questions and search the answers inventively.

DIDACTIC POSSIBILITIES FOR TELECOMMUNICATION

Interaction Network

The applicability of telecommunication and telecommunication services to education should be approached pedagogically and didactically from the viewpoint of the ideal learning environment. The basic qualifications for didactic interaction are as follows:

- learner-centeredness
- intensive interaction
- firm and continuous training and support
- evaluation from different points of view and
- versatile material which is suited to situations

Modern telecommunication technology makes the interaction network between learners, tutors, learning centers and society independent of time and place. Interaction by telecommunication is supposed to improve the accessibility of people and to create preconditions for a lively discussion. The purpose of this is to deliver the message to its destination and to enable the information in question to be received.

Versatility of the Learning Environment

The requirements for communication in an ideal learning environment can be classified as follows:

- easy and quick accessibility, contact, availability to discussion and access to information
- independence from time and place
- possibility to use many different media
- controllability of the communication channels
- opportunities for multilateral communication
- oppurtunities to work with the material in groups
- fast delivery of material
- attention to individual needs
- emphasis on social communication

Availability is affected by the whereabouts of people, in other words, how big a part of time the person in question is at work, near workplace, in car, at home, etc. An important factor of availability is also the way how well we can use different services and equipment. Time used in communication keeps you occupied. For example, if you are always on the phone, you are out of reach.

There is hardly any simple solution for making it sure that you can be reached, because the problem cannot be solved purely by technical means. To describe the required telecommunication services on a general level, it is necessary to look at the demands of communication in detail.

The situation is ideal for the learner if the tutor and the rest of the learning group provide an opportunity to create links for immediate interaction when necessary. In practice, we can never totally reach that stage. To reach a person, it is usually enough to get the information about who is trying to contact you, how urgent the matter is and what it is about. On the basis of those facts, a person is able to make decisions about the optimum time to be used. Moreover, people to be contacted should be easily reached wherever they are. Tutors should also be available everywhere at the same channel address.

Accessibility is good when we easily get the information about when and how a person can be reached. This can be supported by a competent information system, which can be used by everyone. The information about the system must be available on all the channels which are used by the person to be contacted. The information about the address, telephone number, fax and e-mail is the minimum of what should be known. The complementary information tells us what kind of habits, desires and opportunities this person has when using these channels. The system has to be easily accessible with different kinds of equipment and there should be the possibility to update it in many ways. If there is a failure of contact, it is important to get the information about the accessibility of the person automatically from a human or a machine. The person who is trying to contact needs the information for further attempts.

The possibility of contact means that there is a way to direct the information to the target person. Usually there are many things which do not demand immediate interaction, such as simple inquiries and answers to them. In addition to spoken or written material, it must also be possible to send files and visual information to the destination. Although the information does not reach the target person immediately, he should however get some kind of a message at once if somebody has sent him information via any communication channel. Right after the arrival of the information the sender has to be informed of it. Regardless of what channel has been used, it should be possible to send the information to many people at the same time.

Access to information means an opportunity to get the information you want. The search for information must be effortless. Directories must be clear, destination signs understandable and the whereabouts always to be seen. In addition to written text, you must also be able to search and transfer spoken and visual information. In the learning process, the tutor should have a possibility to follow the learning process, for example, how the learner is developing the material he has produced himself. While working in groups, every member should be able to study the task as a whole at any time they wish.

The ideal of time and place independence means that the activity can be done in the optimal way at any time or in any place. It is required that all communication channels are usable for all concerned, independent of time and place. A good solution is achieved if the learner has many different communication channels available. The most important channels ought to be ready for use also in the main studying place. Tutors have to get the information about contacts wherever and whenever they want, independent of channels. They must be able to contact learners wherever and whenever there is a need for tutoring.

Especially for versatile information about society, the opportunities to use many different media are significant. All media should be placed within easy reach for learners. There should be a possibility to order news and documents provided by various media. For this purpose, there must also be opportunities to scan information in all media.

Communication channels are controlled by the sender when accessibility is good, in other words when the information system works. The recipient can control the channels when he has planned his information process himself. Then he has considered how to choose information from different channels. The possibilities for human errors should be minimized. For example, if a person has forgotten to transfer his calls, a delayed transfer of calls to voice mail has been programmed at the exchange. Messages have to reach their destination quickly, independent of location. It can usually be achieved by analyzing the existing practices and by making an agreement about clear instructions. There should be an agreement on the communication rules of the organization.

Multilateral communication has to be possible, for example, to guarantee the progress of the learning discussion in the whole group of learners. Regardless of the channel, you should be able to communicate with many others. The possibility for working with the material in groups is achieved when all those who wish to do so can participate at the same time. Everybody should be able to examine the complete task whenever they want and the desired changes should be immediately reported to everybody. A fast delivery of the material requires that all material has to be conveyed rapidly from any member to any other member.

Taking personal needs into account is often difficult. The equipment and its use should be adjusted according to a learner's own needs. For example, user interfaces of different communication channels have to be self-tailored.

An ideal learning environment makes social communication between the tutor and the learners and among the learners possible. It promotes the feeling of knowing each other.

Feedback and Centers of Services

A learner has to develop his own abilities so that they fulfil the ever changing circumstances and demands of working life and society better than before. The basis for an active and self-directed learning process is laid when the learner becomes aware of a conflict between his own abilities and the current demands which concern both intellectual and functional matters. In addition to self-management, it is important for the learner to reach versatile interaction with different partners from many directions. In a learning situation a self-directed learner is trying to interact with others. The most crucial thing for learning is continuous and intensive interaction between the learner and the tutor. Connections must be quickly available when needed, immediately or by a request for a contact. The learner has to know how and when the tutor is available and by what kind of channels. A precondition for this is the fact that the learner has to know from where to search the information of the tutors availability.

The learning center offers essential services to learners when they are planning their studies, participating in learning discussions and studying their courses. Both the learners and the tutors of the learning center need common databases to search information and gather learning results. A good example of such activities is a local network including learners' personal learning diaries in which learners regularly register their progress and which the tutor can also use by following the progress of the studies. The local network services of the learning center help and facilitate learners to draw up and write out reports.

Besides, learners need books, background material and various registers from the library. They need to know matters of current interest, like public exam dates and results, information about courses in their own or other learning centres, etc. A notice board is a good source of current topics. Student counselling is also one of the services which all learners can use. For clarifying their own learning possibilities, everybody needs brochures about the services of the learning centre, facts about the info and search services of the library, information about the tutors' availability and course requirements.

Contacts to Other Learners, Experts and Organizations

In intensive groups learners guide one another and strengthen their learning motivation while working together. An essential part of self-directed learning consists of mutual encouragement among learners. Studying together with other learners increases the need for interaction and interaction itself brings enthusiasm and joy to studying.

When expert knowledge is needed, the learning centre provides help from external specialists. That shows how independent information is of time and place. Finding a particular expert should also be effortless for learners.

To help a learner to understand what happens in society and in working life and how it affects his own working capacity, there should be an easy access to common databases, independent of time and place. It is highly important to keep the channels to the organizations of working life open and to get information about its changes.

From the view of the learner, it is useful to maintain intense interaction also to colleagues. News and information about ones own working environment and matters dealing with learning are best obtained from people working in the same field.

A RESEARCH AND DEVELOPMENT PROJECT ON TELECOMMUNICATIONS EDUCATION IN THE VOCATIONAL TEACHER EDUCATION COLLEGE OF HÄMEENLINNA

A collaborative research and development project was established by the Vocational Teacher Education College of Hämeenlinna and the Centre for Telecommunication Development in 1993 (Suonperä, 1993a,b). The purpose of the project was to produce methods and facilities of telecommunication which would promote multi-form education and distance learning, and to compose a developmental model adapted to vocational teacher education programmes. The model might be experimented and later applied to other educational programmes. In addition to pedagogical impacts, direct and indirect costs and returns are analysed in the study. The pedagogical expertise of vocational teacher educators, vocational teachers and persons working daily with telecommunications have been utilized in the collaborative project.

The project is called the PEDATEL (pedagogical telecommunications) Project where applications of pedagogics and telecommunications are tried out. The project proceeds in four steps:

① examining the function of telecommunications in multi-form education and distance learning,

② analysing the use of telecommunications technology in multi-form education,

③ experimenting with telecommunications teaching in learning contexts, collecting and analyzing these experiences, and

④ providing a developmental model for multi-form education based on the experiments.

The laboratory schools of the Vocational Teacher Education College are participating in the experiments. The vocational teacher educators conduct the research. Field experiments have been implemented at ten vocational schools with diversified goals and contexts. Teachers and students have been motivated to learn to use telecommunications in teaching and learning. Four schools have developed teaching and learning by networking, four schools are applying audiographics in curriculum development, and two schools are experimenting in how to utilize electronic study journals in distance learning. Based on students' experiences, the Centre for Telecommunications Development has prepared a study journal program for further and extended pilot studies. The aim of the program is to produce a pedagogical tuition system free of the constraits of place and time.

The project has been shown to give rise to enthusiasm among students and teachers, and they are willing to continue with experiments and developmental work. The stake-holders of education have found through telecommunications that there is a relevant alternative for the traditional class-room teaching.

The project has reached the third step. Next, the collected data will analysed and reported.

EVALUATING OF TELECOMMUNICATIONS-BASED TEACHING

A clear mission of an educational institution lays the ground for motivation and cooperation among the whole staff. When everybody knows exactly the meaning of their organization, what services they offer, to whom and how, it is easier to start developing activities and productivity together with developing measures for evaluation. Measuring and analysing the productivity of learning and tutoring facilitates concentration on essential education. Productivity can be divided into the effectiveness of quality and the efficiency and the cost-effectiveness of activity.

The basic factors in measuring effectiveness have immediate influence on the learner's competence and intellectual growth. The effects on the quality of activity and the productivity of work are reflected by the development of the skills of individuals and teams in organizations. Social values and aims direct the objectives of activity and resources. They also lay the foundation for the total assessment of productivity.

The central elements of the efficiency of educational organizations are functioning ability, flexibility and time. Marketing of educational services is necessary to make their supply and demand meet. Efficiency is also supported by individualization and freedom of choice to improve learning motivation and results. The duration of activity (studying time or length of course) and the amount of work describe the instant resource effects of efficiency.

The cost-benefit analysis of public education expenses gives possibilities to follow expenses per learner in different educational institutions and educational programmes. In the cost-benefit analysis of both business and individuals the following things seem to be decisive: absence from work because of studies and other costs from travel, accommodation, equipment and learning material.

In conclusion, telecommunication enables the creation of an evaluation system which covers educational needs and is user-friendly.

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Part Four

QUALITY MANAGEMENT IN OCCUPATIONAL INSTITUTIONS

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QUALITY MANAGEMENT IN OCCUPATIONAL INSTITUTIONS

The aim of the last part of the book is to give an overview of quality management in Finnish occupational institutions. *Maija-Leena Clarkson* outlines the situation in quality assurance in vocational education in Finland. Quality assurance is a relatively new phenomenon in the Finnish educational system. The vocational education administrators have begun, to some extent, to adopt the same quality practices that are increasingly applied in business, industry and other sectors. For example, applying the ISO 9000 Standards (SFS-ISO 9004-2) and Total Quality Management are being piloted at several vocational institutions and adult education centres in Finland. *Maija-Leena Clarkson and Leena Walls* deal with the role of leadership in vocational education in terms of the challenges and opportunities facing it. Leadership in vocational education is being restructured in the 1990s. Changes at the workplace are rapid and constant, reflecting the fast progress of science and technology and the development of totally new ways of working and of organizing jobs. Internationalization brings both new opportunities and new demands. International competition has intensified. Changes in legislation and labour market norms affect educational organizations, too.

The next three articles consider the theme of learning organization. First, *Pentti Nikkanen* gives an overview of a learning organization. His article defines and describes a learning organization and presents results of personnel surveys. A learning organization facilitates in all relevant ways the learning of all its members and their teams. If the organization is striving for continuous transformation and organizational learning, specific requirements are set to the management. Second, *Juha Mäenpää* discusses the concept of core competence and the connections between individual and organizational learning. The improvement of core competencies is becoming a central development area in learning organizations. Those who stress core competencies in the organizational learning process see an organization as an open system. They consider an awareness of core competencies an opportunity for enhancing an organization's competence and for developing it in the direction of organizational learning.

Third, *Heikki K. Lyytinen*'s article discusses the special characteristics of leadership or management in a learning expert agency from the perspective of changes management. Today a leader is largely a person in charge of organizational learning. His roles include building up an organization where people are provided with opportunities for continuous personal growth in the sense of learning to understand diversity, to articulate and elaborate their views and to construct shared models of thinking. The last article of this book, written by *Pekka Ruohotie*, describes professional updating that deals with all developmental functions. Continuous professional growth has become essential to organizational health.

LEADERSHIP IN VOCATIONAL EDUCATION: CHALLENGES AND OPPORTUNITIES

Maija-Leena Clarkson - Leena Walls

ABSTRACT

In the turmoil of the 90's leaders in vocational schools are facing many challenges that they have not needed to face before. Changes in the workplace are rapid and continuous, caused by the ever faster development of science and technology, development of totally new ways of working and organizing work and new findings in the study of the learning process. Internationalization brings both new opportunities, opening up the learning environment to an unprecedented extent, and new demands, usually higher than before, and the need to communicate in many languages. It also enhances international competition, thus increasing the quality demands on the production of goods and services, and education. Changes in legislation and in the marketplace have added to the challenges. All this leads to definite changes in the roles of the leadership in vocational schools. New competencies are required. The status of vocational education in Finland has risen, and further needs to be raised. The old belief, that the academic path is the fastest and the best way to higher social and economic status, is still strong, causing parents and students to favour academic studies to vocational ones. New flexible structure studies will change a lot of the old ways, causing the need for continuous improvement of quality to become more obvious. How one faces all these changes, is a matter of attitude, one sees them either as threats or opportunities. Ingredients for both are always present, but to have a positive attitude to change in general is perhaps the most important weapon of all to succeed in the future.

Descriptors: *change management, decentralization, development, leadership, vocational education*

CHALLENGES FACING LEADERSHIP OF VOCATIONAL SCHOOLS

Changes in the Workplace

We are educating students to a constantly changing, unpredictable world. As the halving time of knowledge gets shorter and shorter, learning knowledge in school will be of less importance than learning skills to find information and to use it in solving problems. Ability to innovate becomes crucial.

As the pace of change quickens, people need to transfer from project to project, job to job, environment to environment much more often than has been the case. In order to cope with these constant changes and deliver successful performance time after time, it is more essential to have excellent general skills (information management, communication, problem solving, change management itself, tolerance of uncertainty, ability to take risks) in addition to the strictly vocational skills.

The ways work is accomplished is changing radically. An increasing share of work is carried out by groups of teams working in projects. One of the most important skills in the future is team working skills.

In order for the school to produce these kinds of skills it has to operate like the flexible team organizations it is educating students for. Leadership, teachers and staff must work in effective teams, be communicative etc. The new core curriculum and structure of studies requires these same skills from all staff.

To young students the school often represents the first model of work place. It communicates to the student the values of work. Whether these values are values of the past or values of a visioned future, makes an important difference to the student's ability to function in future organizations. School should be an example of an organization of the future rather than be a memento of the past. This requires continuous improvement of all the staff. It also requires that the leadership has a vision of the future workplace.

Traditionally in Finland, as in many other countries, the "learning world" and the "real world" have been fairly separate. The school has been a world of its own, and generally it has been thought that most, if not all, learning takes place in school. Likewise it has been customary to think that to advance from simple to complicated is the most effective way to learn. Yet, recent research, especially in Germany, suggests that the opposite is true. Even very young students can comprehend and solve complex problems in complex, real life contexts. This also results in higher level of learning than the traditional method (Achtenhagen & John, 1992).

An open learning environment may be one of the most important factors in successful high level learning. To open up the learning environment means that instead of learning in a closed, artificial model of reality, we try to bring the "real world" and "learning world" closer to each other. To do so, more of the learning needs to take place in real work places: factories, hospital etc., in a continuous interaction. Creating "open forums" in schools to discuss and solve issues and problems of the school together would support creating a workplace like environment.

Internationalization

Economically the world is becoming more and more interrelated and international. The role of nation states gives way to blocks of states, to regions. On the one hand, awareness of global developments, and on the other hand, a local perspective, become essential. The school has to provide and teach both.

Capital does not recognize national borders. Within these blocks of states, even other resources, like labor, move without limitations. Future work force will have to be a mobile one. This poses additional challenges to education. Cross-cultural skills of teachers and students alike become important. The leadership, too, must be crossculturally skilled.

International mobility brings the cross-cultural element into the Finnish school that has traditionally been homogeneous in population. This is one of the biggest challenges, but at the same time one of the biggest opportunities to the Finnish education system.

Some efforts have already been made to tackle this challenge. For the first time, we have added Finnish as a foreign language in the curricula. Teachers are being trained to teach the subject. Programmes on cultural awareness have been developed for teachers and students alike.

For a small nation as Finland, internationalization is extremely important. Our market is too small for profitable production of most goods and services. In order to better prepare students for an international marketplace, an extensive program of instruction in foreign languages has been promoted by the National Board of Education and the Ministry of Education. A good number of schools at all levels of the education system now offer courses and entire diploma/degree programs in a foreign language, most often English.

As joining the European Union has become a reality Finnish schools get linked to European schools in many ways. The leadership of vocational schools needs to promote these linkages and negotiating contracts. Needless to say, the leadership of vocational schools needs to be able to communicate in other languages and feel comfortable with foreigners.

Changes in Legistlation

Traditionally vocational education has been one of the most regulated sectors in public administration. Since 1987 definite deregulation and decentralization has taken place, reducing the number of laws, statutes and regulations in vocational education to a fraction of what it used to be. A further reduction is being planned. There is an effort being made by the government to include all vocational education into one comprehensive law and statute.

These changes in themselves have two effects on the role of the leadership in schools: the decision making power and responsibility of the leadership grows in absolute terms, and secondly, the base of power changes. The former effect will be discussed later in the text. The latter, change of power base, will be discussed here.

Until now, the power base of the principals was more or less tied to their official position. Legislation and regulations gave their power. They could also be referred to as arguments for decisions, which in essence, meant avoiding taking responsibility. This tended to be used particularly, when negative, unpleasant decisions toward staff or students were made.

On the other hand, having all the direction from "above" freed the leadership from analyzing changes in the society and from taking initiative to improve things. At the same time, it also kept them from implementing some of the good ideas they might have had for improvement.

In Finland, education is mostly paid by the state. In January 1993 a change in the funding system of education became effective. Instead of funding vocational schools directly, allocating money separately to various purposes, the state now allots money to the municipalities to be used to fund schools. In vocational education, the amount of money that is allotted is determined by the number of students in the school on a certain date yearly.

Varying practices have developed in municipalities in both how much of this money is actually given to the school and in the extent of the freedom of deciding, what to do with the money.

In the main, the experiences of the new system have been positive. The school leadership knows in advance what its budget frame is. The system is basically quite clear cut. As drawbacks of the new system has been mentioned the fact, that sometimes the municipalities keep some of the funding to finance other sectors instead of education.

The principal's role of securing resources becomes more and more important; networking, lobbying and marketing skills become indispensable. More time and energy need to be spent on these, and less time is available for pedagogical leadership. The principal often delegates this important part of his job to his vice principal.

Changes in the Marketplace

Vocational schools in Finland have faced competition since the late 1960s, when their number was increased considerably. Now the market shows at least two new elements that are likely to tighten competition between schools. The first one is the decrease in the size of the age groups finishing compulsory schooling. The second one is partially caused by the first one, partially by economic factors: the plans of the state to considerably cut the number of vocational schools. It seems inevitable that only the effective, productive and efficient schools will survive. The other ones will either be closed or merged into other schools.

One aspect related to efficiency and productivity is to build up a network of multidisciplinary, larger school units, learning centers, by merging several nearby schools together. Traditionally the Finnish system has been based on separate schools for each or nearly each vocational field. This has led to a relatively small size of schools. Forming these multidisciplinary larger learning centers opens up new opportunities to create completely new programmes and to utilize equipment, machinery and staff in new, more efficient ways.

The merging of different schools often entails changes in the ownership of schools. This trend is enhanced by the recent chain of decisions by the state aiming at totally giving up ownership of vocational schools. New legal forms of ownership of schools are emerging.

All these developments often mean changes in the actual structure and size of the school management, which in practice means some people potentially losing their jobs. Being a principal or a vice principal in these times is both demanding and stressful.

The legistlation of the joined schools allows different forms of owner representation in the decision making of schools. Each school does not need to have its own board any more, except in private schools. In municipally owned schools it is no more obligatory to have representatives of students and staff on the board. If the municipality or union of municipalities has decided to form one board or council for all of its schools, the traditional right of the principal to submit propositions to be discussed and decided upon does not necessarily exist any more.

In this situation the principal has to turn to previously unused ways of securing support for his or the school's endeavors, whether they are of financial character or of another kind. Marketing, negotiation and social skills in general become highly valuable to the success of the school. The image of the school and of the leadership is a strong factor in attracting both financial and human resources, and students.

One substantial change in the clientele of vocational schools is that adults are in increasing numbers seeking vocational education. This is the sector that offers the most market potential in the next two decades or so. Vocational schools have offered vocational diploma programmes for adults for a long time. Departments for adult education were started in almost all vocational schools in the 1970s and the 1980s. In the early 1990s the share of adults 1970s, 1980s, 1990s in vocational youth education classes has been considerable.

These and the previously discussed changes in the market do cause some uncertainty among the leadership and staff in vocational schools. Managing the change and uncertainty is an almost permanent challenge to the schools. A new kind of organizational culture needs to be created which tolerates and takes advantage of the opportunities arising from the changes and the uncertainty. A willingness to take risks is important.

CHANGING ROLES OF LEADERSHIP

Changes in the workplace and the marketplace, changes in the structure of vocational education and in the locus of decision making, and the new way of funding vocational education all mean that the traditional role of the leadership of the vocational school will not be enough. Maybe some sectors of the traditional principal's job need to be taken care of by someone else and perhaps some parts have totally disappeared.

Lean management is gaining popularity in the educational sector as well as in other sectors of society. More and more often a one man leadership has been replaced by a small team that the principal is the head of. From one person power we have moved to a team power, a group power situation. Marget Kantosalo (1994) has discussed this and some other issues resulting from the changes made recently in the Finnish education system in her unpublished Master's thesis called "Deregulation and Decision Making in Business Colleges - Power Relations in a State of Change".

Especially in this period of major structural changes and reform of the way teaching and learning takes place, the leadership, and particularly the principal, need leadership skills more than management skills. The same is true of the use of his time.

The leader needs to provide the vision for the school. To principals who have held their positions for many years, even providing the vision may not be easy. In a centralized, regulated system authorities have provided it.

The principal has the role of a facilitator. It is his and the management team's duty to create an organization climate that encourages and feeds teamwork, innovations, continuous improvement. S/he needs to secure financial, time and training resources to his staff. S/he has to enhance cooperation and communication between members of the organization. Rewarding personnel for success and improvement becomes an important tool for motivation.

How the leadership of a vocational school today manages to make its staff work as teams that strive toward a shared goal, and continuously improve their performance, will also depend on his/her self esteem. S/he must have a good self-esteem to genuinely allow other people to be better, allow them to succeed and take the credit for it.

Education is a service industry. The leadership provides services to their staff. Staff, students, employers, municipal council etc. are his/her customers. It is the satisfaction of these customers that s/he has to aim for. If s/he does not bring any "added value" to his/her customers, s/he is not needed.

We come back to the power base of the principal and the rest of the leadership. In public administration and business alike it is true, that authority based on position is no more enough. In fact, the authority allowed by someone's position, is very small indeed, especially, when we talk about facilitating team work, or innovation.

It is often said, and it seems to be true, that authority needs to be earned every day. In an expert organization - and a school is definitely an expert organization - this is even more the case than in another kind of an organization, where there might be a larger gap between the expertise and educational background of the supervisor, or executive and a worker. In a school, both have same kind of expertise and the same level of education.

The core question that a principal and every leader in a school needs to ask him/herself now, is :

> ***How do I make the others want to give their very best? How do I create an atmosphere where everyone can feel that the vision and the goals are their own and where it is easy to commit oneself to these goals and the vision?***

To make this work, the principal needs to **empower** his/her staff. To do this genuinely, s/he needs a strong self esteem and self-confidence. He/she must genuinely **trust** on his/her staff. This is hard for someone who grew up in a Tayloristic system. Yet, without empowerment and trust, the results will remain below capacity.

Another unfamiliar role to the principals of Finnish vocational schools is the role of receiving feedback on their own performance. It is at least as hard for them to have students and staff assess their performance as it is to teachers to have students assess them. Yet, if the school is to produce **high quality** - and it cannot really afford any alternative - all of this must happen.

Competence of Leaders

In 1983 there was a major change in the terms of employment and role of principals of vocational schools: earlier, principals would be primarily teaching management being considered just a part of their job. Since 1983 they are more like full time managers, with only few teaching hours per week. This was a necessary change, yet most of the principals current are ones that were principals before the change.

Traditionally principals have been recruited from the teachers. Required qualifications are stated in the Statutes and include a minimum of 3 years of full time teaching, and having successfully completed teacher education.

Especially in sectors where teachers have the qualifications to work for private business as well, like in technology and business, it is increasingly hard to attract the best candidates for principals, and even the best people to teach. Salaries in the private sector often exceed salaries in the public sector, especially so in higher positions.

Principals have another unfavorable comparison working against them: teachers in their schools are often better paid than they are, and yet seem to work less. Needless to say that there are not many applicants to principals' positions, not even in these times of recession.

The National Board of Education, and various other organizations do organize management and leadership training for school leadership. Presently, when accountability, quality and effectiveness are increasingly expected of every school, and financial resources are diminishing simultaneously, principals and their staff are facing higher and higher demands.

This situation does raise an interesting and crucial question: How will the formal qualification requirements and terms of employment need to be changed in order to better secure an excellent caliber of leadership of vocational schools? And how do we best support the leaders in acquiring the missing skills. For vocational education to be successful in producing high quality diplomas and high quality competencies, the caliber and competence of the leadership are of crucial importance.

A ROLE OF THE LABOR UNION IN THE FINNISH EDUCATIONAL SYSTEM

Teaching is a strongly unionized sector in Finland, with one central union, the Trade Union of Education in Finland. A great majority of all teachers are members of this union.

To a large extent terms of employment are determined by the union contract. The contract fairly strictly regulates variations in terms of employment. In the last couple of years experimental contracts have been agreed on, particularly in the polytechnics sector. Local contracting has been discussed and is beginning to be applied slowly.

Within the present system of union contracting, the school leadership has limited possibilities to use teaching staff flexibly. This makes development and successful realization of current plans difficult. There is general agreement that changes are needed, but what kind of changes and how to implement them is nowhere near as clear. Discussion on the subject has begun. The experimental contracts in the polytechnics sector include the principle that other work than classroom teaching is counted as part of the paid job. This does give more flexibility to the leadership in the use of the staff.

The new core curricula and the flexible structure of studies would, in order to succeed, require a more flexible system of terms of employment of teachers. This will be one of the major challenges of this decade.

THE STATUS OF VOCATIONAL EDUCATION

In the early 1970s, the structure and duration of vocational programmes were changed. Academic subjects, like foreign languages, mathematics, civics, computer studies, were added to the formerly purely vocational curriculum. This widened the possibilities of vocational students to enter university.

This change has raised the status of vocational education to some extent. Despite this, old values still cause over 50 % of graduates of the compulsory school to seek academic education instead of vocational education.

The attitudes of parents and general expectations often encourage youth to choose the path of academic studies, especially if s/he has been successful in his/her studies. To choose a vocational path takes more courage and independence. In the past this caused a tendency of students with lower levels of motivation and ambition to seek vocational studies. Recently, this tradition has begun to break down.

In the past choosing the academic path of education did more or less guarantee employment and advancement. It also was the quickest way to rise to a higher social class. Today this is not the case. Education does still secure better chances for employment. Studies show that people with less education are more likely to be unemployed than people with more education. Yet, an unprecedented number of even highly educated professionals are unemployed. Having a degree does no longer guarantee a job.

All of these elements have a major effect on the caliber of students that enter vocational schools. Different fields of vocational studies are different in attractiveness. But to all vocational schools, improving the image and attractiveness of the school in comparison to general upper secondary schools, is a continuous and extremely central task. The responsibility of it is mainly on the shoulders of the principal.

Research shows that a vocational diploma of the first level (1-2 years) does not have a major effect on the salary of the person, but a diploma of the second level (2-4 years) does have a positive impact on the salary (Asplund, 1993).

Finland is ahead of most other countries on the issue of equal pay to men and women. Yet, in most occupations and professions, women's salaries are about 80 % of men's salaries in equal positions. Teaching is one of the few professions where women are paid equally. In vocational education, all other fields except technical fields are taught by women much more often than by men. A more equal situation would be more desirable.

EFFECT OF THE NEW FLEXIBLE STRUCTURE ON MANAGEMENT OF VOCATIONAL SCHOOLS

The new flexible structure of upper secondary studies expands options available to a student. S/he can take modules from all upper secondary schools to make up a diploma. It is likely that crossing between academic and vocational modules will increase substantially. This is likely to have an equalizing effect on the status of vocational education compared to general education.

The practice of students choosing modules of studies from different schools for their diplomas might lead to narrowing the gap between vocational and general upper secondary schools. This might eventually lead to equal salary levels among teachers.

On the other hand, the fact that the old values on education in society are still quite strong, it is possible that academic studies will gain popularity decreasing the volume of vocational education.

The flexible structure will bring challenges to principals as well as teachers. To be attractive to students, schools must offer a variety of combinations of modules, and high quality. It will also be more important than before that a school has a definite profile or image. One could even talk about competitive advantage.

Making a schedule that allows the student to take modules from different schools into his/her programme is a major challenge. It has even the number of terms been necessary to change in order to accommodate the students' needs.

The students are the priority customers of the school. They are the ones that the whole system is for, even though in the end the system serves the economy and the society. But we only need schools as long as we have students. And it is **their learning** that the education system is built for. It is also their learning that will produce the competencies the society needs for it to function well.

It is also the students who will be in the front line to assess what the **quality of their education is. Producing poor quality education is far too expensive to any society, particularly so for a small one.**

TURNING CHALLENGES INTO OPPORTUNITIES

All of the changes in the society, markets and structure offer opportunities as well as challenges. More than ever before, there is a feeling of freedom to develop and create vocational education. Changes made and planned are fascinating, if one has the courage to discard and unlearn the past models and practices, and plunge into the experimental, into the innovation.

The exceptionally deep recession of the early 1990s has forced the state to direct a larger share of the budget than previously to educating the unemployed. Vocational adult education centers and adult education departments of vocational schools have multiplied their courses to the unemployed, funded by the government. After the recession passes, more effort and resources will need to be directed to further education needed by companies and other organizations. This is a growing opportunity for schools to procure extra financial resources to be used for further development. This is also a very important avenue to strengthen the image of a Service Center.

Vocational schools always have been an important factor in their local economies. The adult education departments of the schools have traditionally been community oriented, offering courses that the local organizations need. The future vocational school could be envisioned as the main center for a variety of services the community might need. It should also be the center of innovation for the development of new products and methods of work, thus accelerating desired changes in the community.

As a career in Finland, teaching has offered very limited opportunities to advance. And it has offered a limited possibility to vary one's work. Now, with new customer based methods of teaching, and with the role of teachers changing radically, and the structure of jobs needed to take care of the needs of the students becoming more versatile, a much bigger variety of work opens up to teachers. This should increase their motivation, thus making the job of the leadership easier.

The new situation also allows a much wider portion of the teachers' capacities to be used. A teacher may be able to teach or do something s/he has always wanted, but never could in the old, regulated structure. This again should increase motivation.

Even the leadership has a much wider selection of roles and tasks available for them than in the past. To many principals and managers, this is an opportunity to fulfil more of one's needs in the job. Opportunities to develop underused or completely new skills are vast in this new situation, again both for the teachers and the leadership.

Multidisciplinary learning centers with flexible, modular curricula designed by the centers themselves are encouraged to develop new programmes, new courses and new competencies. The future will show how much improvement has really taken place. The promise in the education system is great. Opportunities exceed challenges by far, if only we have the courage, the skills and the determination to make them work for us.

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QUALITY ASSURANCE IN VOCATIONAL EDUCATION

Maija-Leena Clarkson

ABSTRACT

To better serve its customers, the Finnish Vocational Education system has quickly started to adopt in its own operations quality practises that are increasingly applied in business, industry and other sectors. ISO 9000 Standards and Total Quality Management in all its forms are being piloted in many Vocational Schools and Adult Education Centers in Finland. The chapter for Quality in Education was founded in January 1994 in the Finnish Association for Quality. It proposed the development of special criteria for the education sector in the National Quality Award. The development of a national strategy for quality improvement and assessment in education is in its beginning stage in the Ministry and the National Board of Education. Interest in quality is increasing rapidly in all sectors of vocational education, be it for youth or adult clientele.

***Descriptors:** assessment system, quality management, quality of education system, national pilot project*

HISTORICAL BACKGROUND

Quality assurance is a relatively new phenomenon in the Finnish education system. As ISO 9000 Standards and Total Quality Management in all its various forms have spread among industry, it has become necessary that schools educating students for industry would need to include quality management and standards in their curricula.

Some of the private training institutions training people for business and industry were the first ones in Finland to adopt Total Quality Management or Quality Standards. This is quite natural considering that their curricula include either practical training or a research project or both. These schools and departments usually co-operate fairly closely with companies. The same is true with all the 42 centers of Vocational Adult Education. All of them have started their quality projects, some already as early as three to four years ago (Clarkson & Walls, 1993).

The National Board of Education initiated and organized the First National Conference on Quality in Education in May 1994. Our main goals in organizing it was first to enable a relatively large Finnish audience of educators to hear presentations from countries where quality management and/or standards have been applied to educational organizations for longer than they have been in Finland, and second, to introduce some of the Finnish experiments to a larger audience. The final goal of the conference was, of course, to spread interest in Quality to as many educators and schools as possible.

We founded the national chapter for Quality within Education in the Finnish Society for Quality in January 1994. Our small founding group felt that it was extremely important at that stage of the development of the Finnish Education System, when a national system for assessment was in the process of being created, to establish a forum for discussion and learning about quality in education. Almost one hundred individuals were present at the founding meeting, and membership is constantly growing.

The chapter is a forum open for all interested in quality in education and training. Our basic philosophy is to improve the quality of learning of our life long customer, a pupil and later student. In order to continuously improve our national education system, we need to understand our customers, 'co-producers' and 'suppliers' at all levels of the education system. In the past, when this cross-level discussion, understanding and co-operation was fairly uncommon, resources were wasted on multiple teaching and multiple learning, and yet the system often failed to offer all of the knowledge and skills that a student starting on a level of the educational ladder would need to succeed. Understanding the concept of Life Long Learning seems to be a prerequisite for producing higher quality learning in a national education system.

ON THE WAY TO NATIONAL ASSURANCE OF HIGH QUALITY IN EDUCATION

Universally, education has been and is one of the main strategies in ensuring economic competitiveness of the national economy and thus a high standard of living. In countries with a similar social structure to Finland, education has also traditionally been the most effective way for an individual to rise on the social ladder. On both the national and the individual level, the quality of learning and achieved competencies and skills will, in the future, be crucial to whether education remains the most effective pathway to either national competitiveness in the international market or to an individual rising in the social structure of society.

In the past few years of an unusually serious recession, the pressures arising from the tightening state and municipal budgets have forced schools and education authorities to pay more attention to efficiency, cost of education and accountability. Money available for education has decreased year by year. Yet the system cannot afford to lower standards, so quality has been one of the two main points of emphasis in the long range education plan of the government since 1993. The second most important point of emphasis mentioned in the plan is the internationalization of education. The great challenge to the whole education system, as well as other sectors of public administration, in the rest of this decade is to produce better quality for less money.

ISO 9000 Standards and Total Quality Management as well as Quality Award Criteria all offer useful and effective tools to both raising the quality of education and making education more cost efficient. More and more schools are seeing this potential and have started to apply quality thinking, philosophy and principles to their processes. More than in the past, schools are learning to see themselves as organizations just like any other organizations.

All varieties of vocational schools are now getting interested in applying quality principles and practices in their operation. Schools of Health Care and Social work are perhaps the second most interested sector after Schools of Technology. By now, there are quality projects in some schools in every vocational sector. One big step was made when the board of presidents of our new Polytechnics decided that quality projects would be starting in all Finnish Polytechnics. This decision was made in spring 1994. Häme Polytechnic and Lahti Polytechnic had already started earlier and have advanced considerably.

The Lahti Centre of Helsinki University of Technology, with support from Finnish corporations, started a one-year Master of Quality Program in Lahti in 1993. The first "Masters of Quality" got their diplomas in spring 1994. Similar and other kinds of programs are being developed elsewhere.

The National Board of Education has given financial and advisory support to 19 pilot projects of quality improvement in the country, covering 27 Vocational Adult Education Centers, over ten vocational schools, and one multidisciplinary Polytechnic. These will be analyzed and the results used as guidance and benchmarks for other schools.

The Finnish Society of Quality in Education has decided to propose the development of separate criteria for education organizations within the framework of the Finnish Quality Award. This will be discussed in the board of the Society in December 1995. A separate category to compete for a quality award would be a good national tool for encouraging continuous quality improvement in education. We in the chapter of Quality in Educational feel that Finland would be able to contribute even to international discussion and development of award criteria for quality in education. A subgroup consisting of educators, researchers and administrators is working in the chapter to develop the criteria.

An investigator was appointed by the Ministry of Education to study the 22 experimental Polytechnics and to make a proposal for the system of selecting and founding the permanent network of Polytechnics in Finland. His task was also to propose criteria for the selection of the permanent Polytechnics, and a framework for a system of assessment and development of the Polytechnics. His report bases its proposal on a Quality Based Development System. If his report gains approval by the Ministry of Education and by the government, the Finnish Polytechnics System will have a systemic quality improvement built into the assessment system.

Creating a national strategy for continuous improvement of quality in the education system will be proposed to be a goal in the contractual agenda for 1995 of the National Board of Education that will be negotiated between the Ministry and the National Board. If approved, this will allow nationwide systematic installment of practices that will both support and ensure high and improving quality in the education system within the portfolio of the National Board. This covers all formal education except the Universities.

In a small nation, it is possible to design and carry out reforms on a national level, even without a centralized administration system. It is also more obvious and unquestionable to a small nation than to a large one that highly qualified people are ultimately the only resource it can count on for staying competitive in an increasingly competitive and rapidly developing world. Thus, continuous improvement of quality in education becomes an easily understood and motivating strategy for survival.

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QUALITY DEVELOPMENT OF VOCATIONAL INSTITUTIONS

Pentti Nikkanen

ABSTRACT

A learning organization at its best represents a future state that institutions of education should strive for. In this paper the learning organization is defined and described. A systematic internal development of a vocational institute is below seen as qualitative development of activities and as securing of quality. After the definition and evaluation of quality, the present paper examines some of the results of surveys on development needs conducted among the personnel of 22 institutes. A comparison of the present state and the ideal state show that, in general, educational institutes still have a lot to question in their strategy selection and a lot to unlearn in the development process of a learning organization. Finally summaries are presented for further development of the quality of vocational institutes.

Descriptors: *learning organization, quality development, evaluation, quality.*

INTRODUCTION

Recent changes in the external control system (see Nikkanen, 1992a) have brought along considerable additional challenges to vocational education and to the development of individual institutes. Decision power in municipalities and educational institutes has been increased especially since the mid 1980s also in Finland. After decentralization, it is not even appropriate for schools to expect specific instructions and orders from higher administrative levels. When noboby outside the school is able to solve the internal problems of the school, they have to be solved using the expertise of those working in the school.

At the beginning of the 1980s, OD-type systematic internal development of an educational institute was still quite unusual in Finland (see Nikkanen & Valta, 1985; Nikkanen, 1992a). But now, ten years later, there are many institutes that have taken an active stand to future challenges. This is shown by e.g. several experiments, cooperation programs and also internal, self-initiated development schemes. For instance, there are experimental colleges of vocational higher education (polytechnics), pilot studies on the integration of secondary-level general and vocational education, as well as pilot studies on flexible schooling structures, and also collaboration and internal development of institutions of education.

The integrated development of a vocational institute needs a direction. According to the foundations of futurology (see Amara, 1981) firstly, the future of, e.g. a single institute cannot be predicted. Secondly, the alternatives for the future of schooling are open. Therefore, the future of an institute is not predetermined. Thirdly, we can influence the future through our choices and actions: Tomorrow is built on today's deeds. An increasing number of researchers are convinced that a learning organization at its best represents a future state that also institutions of education should strive for (see Nikkanen, 1989, 1992a; Senge, 1990; Pedler, Burgoyne, & Boydell, 1991; Niemi, 1992; Sarala, 1993).

Pedler et al. (1991, p. 1) stress that "if we are to survive - individually or as companies, or as a country - we must create a tradition of learning companies". In order for every vocational institute to be able to be a learning organization the vision, learning organization, ought to become clear. Therefore the learning organization is defined and described in the following chapter. Systematic internal development of an educational institute is below seen as qualitative development of activities and as securing of quality. After the definition and evaluation of quality, the present paper examines some of the results of evaluation surveys on development needs conducted among the personnel of 22 institutes. Discussed are also the author's consultation experiences in these institutes. Finally summaries are presented for further development of the quality of vocational institutes.

ORGANIZATIONAL DEVELOPMENT AIMING TO A LEARNING ORGANIZATION

According to Pedler et al. (1991, pp. 1, 18) learning company is an organization that facilitates the learning of all its members and continuously transforms itself. In such a company policy and strategy formation, together with implementation, evaluation and improvement, are consciously structured as a learning process. Senge (1990, p. 14) for his part defines learning organization as an organization that is continually expanding its capacity to create its future. Duncan and Weiss (1979, p. 84) define organizational learning as the process by which knowledge about action outcome relationships between the organization and the environment is developed. Marsick and Watkins (1990, p. 229) suggest that organizational learning might be defined as the organization's capacity to create, diffuse, and use knowledge in response to non-routine events. It consists of the intentional and unintentional processes of the formal and informal learning systems of the organization, including the organization's learned responses to environmentally induced change.

The level of generality and points of emphasis do vary in the definitions above. It is very difficult to include all aspects of the concept even in a theoretically broad definition. However, in the following a combination of the essential elements of the definitions by Pedler et al. (1991), Senge (1990), Duncan and Weiss (1979), and by Marsick and Watkins (1990) is proposed:

A learning organization is an organization that continuously and in all relevant ways facilitates the learning of all its members and their teams. It takes the internal and external clients into consideration and is conscious of its core competencies. Consciously it also transforms itself by structuring its policy and strategy formation, evaluation, implementation, and improvement as a good learning process, develops knowledge about action outcome relationships between the organization and the environment, and expands its capacity to create its future.

All the definitions above focus on learning that takes place at the system level rather than at the individual level. The researchers also point out that learning is a process, not an outcome (see Levitt & March, 1988; Dixon, 1992).

On the basis of the literature, the learning organization can be characterized by the reflective working of its members, learning by experience, participation, shared visions, awareness of core competencies, commitment to work and responsibility, teamwork, diversified group work, collaboration, creativity and innovativeness, approval and appreciation of differences, self-direction and self-assessment, information flow, continuous giving, getting, collecting, and acquisition of feedback data, all-win conversation culture, listening and helping each other, freedom, and encouraging atmosphere (see also Sarala, 1988, 1993, pp. 4-5; Senge, 1990; Mäenpää, 1994, pp. 22-25; Nikkanen, 1994a, pp. 16-20). Pedler and his colleagues (1991, pp. 78-79; see also Fullan, 1991, p. 353) also say that the learning organization is flatter in hierarchical terms than its predecessors, it relies less on line management and more on individual responsibility, autonomy, and decision making.

Work communities in many Finnish vocational institutes have reported that many of the above are qualities they are striving for (Nikkanen, 1992a). Pedler et al. (1991, p. 1) encourage people to take charge in company with others not just to earn but to learn together. Through learning together and co-operation the members of a work community develop their ability to influence their own future. In order to improve learning, it is important to pay more attention to the internal and external learning environment. Senge (1990, pp. 310-312), for example, states that conflicts between work and family may be one of the primary ways through which traditional organizations limit their effectiveness and ability to learn. Senge also sees that an organization has many other concrete steps that can be taken to decrease the conflicts. As an important first step Senge points out that one has to acknowledge that one cannot build a learning organization on a foundation of broken homes and strained personal relationships. This view of his should be more clearly present in the projects for internal development of vocational institutes, because an individual is always an indivisible whole.

Senge (1990, p. 5), who is frequently referred to in development literature, says that what fundamentally will distinguish learning organizations from traditional authoritarian 'controlling organizations' will be the mastery of certain basic disciplines. They are a) systems thinking, b) personal mastery, c) mental models, d) shared visions, and e) team learning. Each of them has three distinct levels: practices (what you do), principles (guiding ideas and insights) and essences (the state of being of those with high levels of mastery in the discipline; see p. 373). There are distinct stages of learning that we all go through (Senge, 1990, p. 377; see also Woolner, 1992, pp. 44-46). By the five disciplines of learning, Senge means the frame of theory and technique, which every member of a work community must study and master to be able to put them into her/his practice. Senge (1990, pp. 10-11) emphasizes learning by doing and training. It means a lifelong task to follow the disciplines Senge has proposed for the learning organization (see also Dixon, 1992, pp. 29-49). These disciplines should be considered more carefully also in the quality development of vocational institutes.

A learning organization does not only focus on survival or on training its members. Adaptive learning, 'survival learning', is important and necessary. It should, however, go hand in hand with creative learning, which increases the creative capacity of the members of a work community. A learning organization tries, on the one hand, to bridge the gap between theory and practice, and on the other hand, to increase its capacity to change and adapt flexibly and bring about reforms continuously (see also Woolner, 1992). "Individual learning does not guarantee organizational learning. But without it no organizational learning occurs" (Argyris & Schön, 1978, p. 20; see also Senge, 1990, p. 139; Pedler et al., 1991).

In a holistic learning process, which is based on the idea of experiential learning (Kolb, 1984, pp. 21-25, 42, 66), an individual's prior knowledge is analyzed, modified and complemented by new information obtained from self-reflection and new experiences (see Zeichner, 1993). Learning improves when it becomes a conscious process involving a) direct personal experiences, b) reflective observation of one's own thinking and acting, c) aspiration for theoretical mastery of a phenomenon through examination and understanding of its elements and their interrelations, and d) initiation of experimental activity, and when the above phases become e) a continual and developing process taking place in the social interaction between a work community and its environment. According to Eteläpelto (1992) a reflective person is committed to his own continuous growth and learning process. Both individual learning and learning from each other in cooperation is needed. For example Huhta (1992, pp. 12-16) finds networking a tool for learning. Like Kolb (1984), she emphasizes experiential learning and also learning from others' experiences.

There has been confusion about terminology in the literature on internal development of organizations, especially in the use of the concepts 'organization' and 'work community'. Sarala (1993, p. 4) has ended up using the concept 'learning-oriented work community' as a near-synonym to the learning organization (see also Murto, 1991). The learning organization actually means a work community where its members learn together by doing and from experiences. Additionally, it is important to notice, firstly, that in large vocational institutes with many branch institutes the staff can be divided into many work communities. Secondly, a group of people sharing a working room is not necessarily a work community (see Murto, 1992, p. 11; Nikkanen,1994b, pp. 13-14).

A learning organization is sometimes considered an ideal or utopia which cannot be reached. According to Senge (p. 11) you can never say, 'we are a learning organization', any more than you can say, 'I am an enlightened person'. The latter part of the claim can easily be accepted, but on the basis of the first part you cannot be sure of your interpretation. Probably Senge meant to say that we cannot state we already are a *learned* organization. Senge's notion "The more you learn, the more acutely aware you become of your ignorance" gives support to this assumption. This idea is inherent in a learning organization. Sometimes the term learning organization is used to refer collectively to initial stages of development indicating lesser competence or knowledge on the novice-expert dimension at the group level or at the level of the whole organization. Learning organization may also refer to a model of the functioning of an organization that has reached a higher level of know-how, and in team learning it may refer to a probable vision: "The learning company is a vision of what might be possible in our own organization", too (see Pedler et al. 1991, p. 1). The pictures of future, visions, will in time change into facts of the present state.

It is assumed in this article, on the basis of the present author's experiences from his developmental research, that a learning organization is not utopian. It may not be a good idea to call it "operational ideal" either, as Sarala (1993, p. 9) does, although he points out quite rightly that, as an operational ideal, it is nothing that is easily and readily available in the near future and that the way to become a learning organization is long and strenuous. Utopia or a distant operational ideal do not motivate for learning. The main thing is a conscious strategic intent towards a learning organization. Any organization, if its work community so wishes, can be, and find itself to be, an organization that is continuously learning new things. It is then a question of the extent of commitment to joint development and learning. Only organizations that are drifting or especially those lying at anchor sticking to their positions, regard themselves, *in their own opinion*, as fully learnt organizations (Nikkanen, 1992a, p. 8). Because the concept of learning organization has been associated with various semantic contents from a dynamic process (learning) to a static final stage (learned), its meaning in theoretical use should be defined more precisely. A promising and clarifying suggestion to use the term comes from Pedler et al. (1991), who in the subtitle of their book point out that it can be taken as a strategy for sustainable development. A learning organization has a lot of the same features as total quality management (TQM, TQC). Lillrank (1990, p. 33) gives TQM the following practical definition: Everyone has to do everything well all the time.

QUALITY AND EVALUATION

Quality and its improvement have become central topics in recent discussions on the development of educational organizations. Quality has permanently replaced quantity in importance. Quality is not only defined as needs satisfaction experienced by the client but also as contentment following the satisfaction of a need, and even as an ability to exceed the client's needs and expectations. For example, Taanila (1993, p. 2) notes that the quality of a product and service is good when the client's experiences of it come up to or exceed his needs and expectations, that is, when the client is satisfied with the product/service. Taanila regards the quality of a product as the consequence of the quality of an activity. The quality of an activity focuses on the internal processes and individual activities of an organization. According to Taanila (1993, p. 2) the most common mistake when we talk about the quality of education is that it is understood only as the external quality of education with no concern for the internal quality of education. Good external circumstances, such as comfortable rooms, modern teaching equipment and methods, and good teachers, are not enough to guarantee that the internal quality of education is good, that the education itself meets the educational need and produces results. Taanila obtains support for his claim from Barnett (1992, pp. 45-46) who notes that it is considerably easier to handle technical and methodological issues than essential issues regarding clients' internal wishes and intentions or fundamental values underlying various quality-related approaches.

Quality is also defined as matters of significance to the client (see Senge 1990, p. 124), as a company's main competitive element (Lillrank, 1990), and as 'a good reputation' (Åhlberg, 1994, p. 70). Do well or die! Quality means that work is done efficiently and right the first time, on time, and every time. The quality concept is strongly subjective and value-based. Different parties have their own expectations based on their own perspectives regarding quality. The quality concept can be seen in a number of ways: quality as exception, quality as perfection, quality as fitness for purpose, quality as value for money, and quality as transformative. Quality is a controversial concept among many interest groups (see Barnett, 1992, pp. 44-45).

The proposed definitions are not mutually exclusive. In fact, they reflect the different emphases they have had in different contexts. At a general level, the following references are based on the definition that is presented by Westerheijden (1992). According to it quality is an entity containing the features and qualities of a product or service that can be used to satisfy the needs defined and presented by clients. An organization's quality system ensures that products, processes, and services meet the set quality requirements.

Development strategies indicating priorities of goals, results, resources, process and quality have long been used in the world of enterprise but have also been introduced in education. These strategies share the common feature of emphasizing the importance and necessity of evaluation. Irrespective of the educational level, versatile evaluation activities and evaluation data are increasingly needed to provide guidance and a basis for decision making.

To evaluate means to define, to determine or set the value or amount or to ascertain the value or amount (see Hurme & Pesonen, 1974, p. 327; Smith & Glass, 1987). Evaluation aims to define the value (=quality) of a certain product, process or programme (educational service) of education and schooling so that it helps decision making (see Best, 1977; Borg & Gall, 1979; Nikkanen, 1986).

Evaluation is an important part of vocational and social life. Scientific evaluation is justified and necessary (cf. Saari, 1993; Nikkanen, 1994c). Along with the internal development of the school, emphasis in school evaluation has shifted from traditional evaluation of educational achievement to evaluation of the teaching-learning process. This has expanded the field of evaluation.

Evaluation, which in itself is important, is often experienced as threatening and it is easily resisted. Therefore it is important to make sure that all parties understand "the rules of the game". Authoritarian procedures lead to a multitude of problems. Rules could be clarified and evaluation in general be organized using the following questions, which are useful already when planning evaluation (Nikkanen & Lyytinen, 1995): 1) What does evaluation aim at? 2) What questions does evaluation seek to answer? 3) For whom is evaluation? 4) What stages should evaluation include? 5) What information is collected? 6) How is information collected? 7) How is information analyzed? 8) To whom are the results reported? 9) What kind of information is needed? 10) What task areas does evaluation include? 5) Who does what, where, when, how, etc.? 12) Is the scope of intended self-evaluation in correct proportion to the amount of other important work? 13) What is the cost of evaluation?, and 14) What kinds of consequences does evaluation have for different parties?

When the work community/communities, various personnel groups and individual members of an educational institute evaluate their own activities they try to find out, among other things, to what extent the set objectives have been achieved, how successful the activity has been, and whether the work environment has offered good circumstances for learning and working. Evaluation requires continuing and systematic collection of feedback on activities. The use of diverse feedback in evaluation gives a more accurate picture of the matter under evaluation and helps evaluators to learn alone and together, and to direct development efforts in a relevant way.

QUESTIONING BEHAVIORAL PATTERNS AND STRATEGIES OF VOCATIONAL SCHOOLS

The following chapter deals with the findings which were revealed as results of questionnaire interviews. In his developmental research at many Finnish vocational institutes represented author, (Nikkanen 1992a, p. 46) has discovered, among other things, that in every institute the staff members have been able to characterize a good work community. Many of those descriptive features also aptly describe learning organizations. Members of the work communities had a firm vision of how they would like their work community to develop. They emphasized the significance of good human relations, an open and encouraging atmosphere and community spirit. Many replies also expressed the desire to work together and avoid cliques. People wanted an open and unprejudiced atmosphere where everyone has a right to their own opinion and where people dare to bring up also unpleasant issues. Flexible cooperation was considered important at all levels. According to the respondents, a good work community supports and encourages its members to do their best even in the face of adversity. People in a work place should be interested in each other's work. Those with ideas should be given room, everyone should be given a chance to influence things and to develop themselves. Working for common goals and objectives was considered important. Several respondents were of the opinion that problems should be solved right away. They should not be covered up or postponed unnecessarily. The director was expected to listen to the employees' opinions, to be fair to everybody and to discuss things with his employees. Feedback was not only expected from the director but also from other colleagues. From their work community people wanted flexibility, activeness, openness, keeping to what had been agreed, fairness, development potential and willingness.

The above thoughts describe the ideal state of a good work community, whereas the following citations from the results obtained in the survey of the development needs of educational institutes describe the prevailing present state. A comparison of the present state and the ideal state show that, in general, educational institutes still have a lot to question in their strategy selection and a lot to unlearn in the development process of a learning organization.

During 1993, a survey of development needs was carried out among the personnel of 22 vocational institutes. The questionnaire included 114 statements covering 19 central development fields (see e.g. Nikkanen, P., 1992a, pp. 20-33, Appendices 2-4; Nikkanen, T., 1993, pp. 27-46). The necessary instructions and statements with their scales were produced in each educational institute on the computer screen by using the ODIN 4.0 program. Responses to the statements and background variables were saved in the computer memory before the next person arrived. Respondents totalled 1,258. The loss was 18 per cent. Table 1 (Appendix 1) contains one statement and the answer to it from each of the 19 development fields describing the general development state and development needs of educational institutes.

The overall impression given by Table 1 is based on averages: The results for individual institutes deviate from that in one direction or the other. Also, the results for different staff groups may differ remarkably from each other within an institute (see Table 1, Appendix 1).

Following the ideas of Argyris (1990), Schmuck et al. (1977), Argyris and Schön (1978), Schmuck (1984) and Schein (1987), more attention has been paid on the characteristics of the deep structure of organization culture, ie. on the underlying assumptions (see also Bluedorn & Lundgren, 1973, pp. 144-145; Walter, 1985). These include values, norms, attitudes, presumptions and various lines of action, e.g. such as development strategies, generally adopted in the organization. Basic assumptions form the unwritten operational theory that guides the behavior of the members in the organization. For example, the work community of an institution has a common idea about the operational theory of the institution - a common truth. In accordance with Schein (1987, p. 26) the term 'organization culture' can be defined as the model of basic assumptions that a group has invented, discovered or developed when learning to handle its problems related to external adaptation or internal integration. This model has worked well enough to seem justified and therefore to be taught to new group members as the way to recognize, consider and feel about problems. Moreover, because such assumptions have repeatedly proved working, they have probably become self-evident and unconscious.

Also in vocational institutes there are many things considered self-evident, which no one thinks to question, and which are preferably passed over as quickly as possible. This kind of avoidance strategies are met quite frequently in a consultant's work. There is often a great deal of rhetorics and fluent speeches but only too rarely the speeches are related to concrete developmental deeds. Yet, it is important to a learning organization that learning is manifested as changes in the actions of members of the work community.

Argyris (1990, pp. 91-94; 1977, pp. 115-118) has formulated two models of organizational learning: Single-loop learning is a process that attempts to find problems, mistakes or faults - i.e. development targets. When these problems have been found in a joint effort, they are sorted in the order of priority, after which 'something is done' to them. If the operational strategy

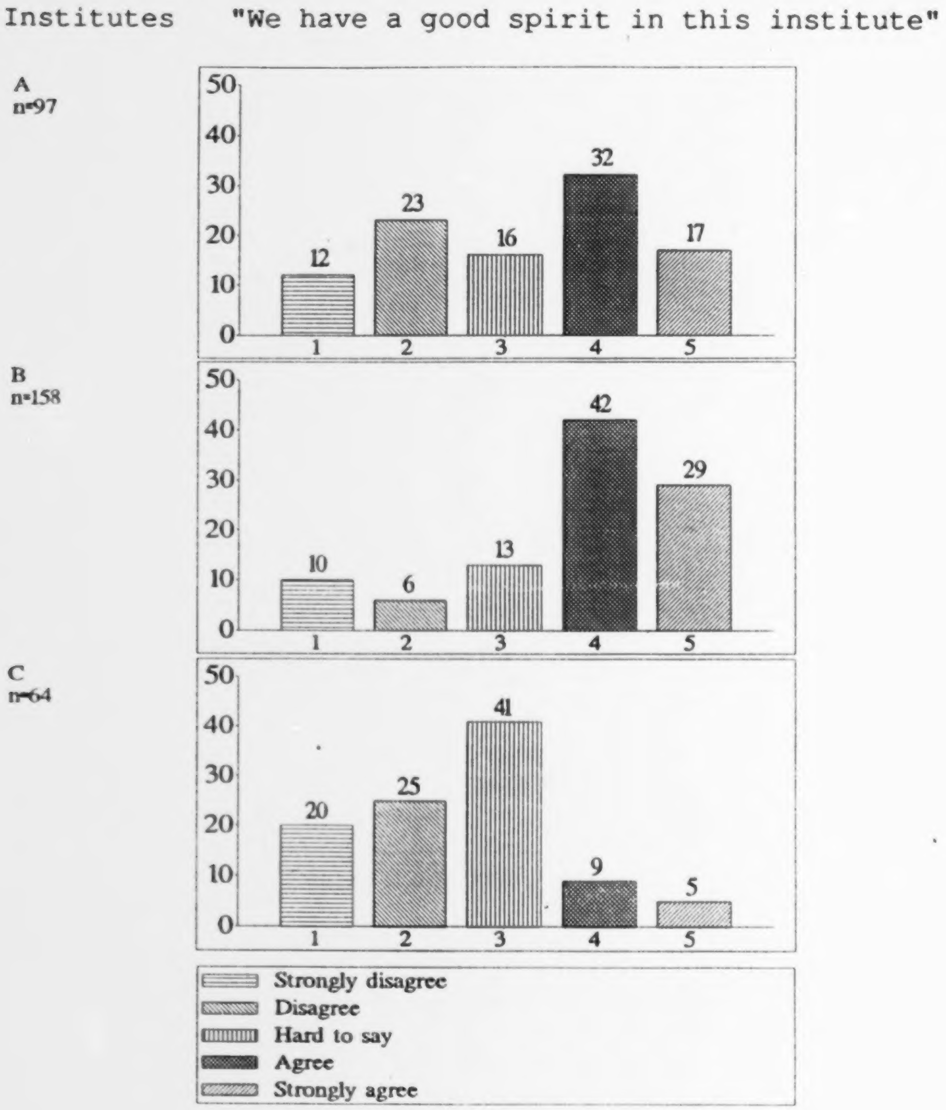

Figure 1. *Example of Deviations Between Three Vocational Institutes (see also Table 1, Variable 9).*

chosen gives the results desired, it will be used also next time. In single-loop learning, even if the strategy fails to lead to such results, the organization is not ready to change it and act differently, but repeats the same actions in principle. In double-loop learning, then, the mismatch between expectations and results is fixed by analyzing, questioning and changing together, first, the determining factors underlying the operations, and after that, the actual operations. Here, a search process is utilized to solve an organization's problems by reconsidering the weight and order of existing values and changing the guiding principles on which behavioral strategies are founded.

In an educational institute, the members of work community have different qualities (knowledge, skills, attitudes and experiences). All of them have their own conception about the world (e.g. Wright, 1981). Therefore, they also make different interpretations (what they say; espoused theories) about the internal and external stimuli from their work or workplace. Individual members make up their own image, theory-in-use, of the operational theory adopted by the whole organization (Argyris, 1992, p. 8; 1990, pp. 12-13). In the end, an individual's subjective opinions and experiences affect his/her behavior. According to Argyris (1976, pp. 3-32) the world of behavior is the artefact of our theories-in-use. We all have several theories-in-use, of which we choose one for the situation at hand, depending on the context and on our mental models (see also Senge 1990, pp. 8-9, 174-204). Each member of the staff forms his/her own subjective truth, which may then be accepted generally by the other members and become the collective truth. Within an institute, it is wise to discuss together, in a democratic and enlighted conversation, each member's subjective truth that has been expressed, e.g. in a development needs analysis. In such a conversation all are "winners": When the conversation culture is good, information is being shared and compared with one's own knowledge and with that of others', so that the 'common truth' comes gradually closer (see Huhta, 1992, p. 16; Nikkanen, 1983, p. 166; 1988, pp. 15-16; 1989, p. 65; 1990, p. 129; 1992a, pp. 11-12; Nikkanen & Piirainen, 1991, p. 10; Nikkanen & Valta, 1985, pp. 16-18; Pedler et al., 1991, pp. 62-63; Sarala, 1993, pp. 5-9).

Also Senge (1990, p. 10) puts emphasis on dialogue, the capacity of team members to suspend assumptions and enter into a genuine "thinking together". He says that dialogue facilitates team learning. Thinking together gives the members a possibility to find out or invent such ideas and views they could not reach otherwise. Cantley (1980, p. 21) stated that where the information flows, so does the potential for learning. Huber (1991) says that wide distribution of information within an organization leads to more broadly based organizational learning. Coulter's (1979, p. 22) and Donnellon's (1986, pp. 136-159) studies, for their part, indicate clearly that we can learn more about the different processes of an organization by studying communication behavior.

INSUFFICIENT ACQUISITION AND USE OF FEEDBACK DATA AS A BOTTLENECK OF QUALITY DEVELOPMENT OF VOCATIONAL INSTITUTES

In the following, my observations of some experiences of the institutes point out the essential problems the institutes met when collecting and using descriptive feedback data concerning their functions: Staff groups seemed to have different attitudes towards data collection and use. They valued the data collection on the basis of their own subjective views. Their attitudes depended largely on their commitment to systematical development and on the extent to which they believed to be able to utilize it. They, especially the headmaster and teachers, were usually not willing to collect such an extensive amount of data as would have been relevant for developmental activities. Very often staff members regarded data acquisition as something which was likely to serve other interests than the goals of the institute's change effort (see also Burke 1987, p. 140). Indeed, a vocational institute is not a research institute. The feedback information should support and improve teaching-learning effort. Yet, often the arguments presented by the staff expressed mere excuses for avoiding data collection and evaluation.

Staff members did not usually have patience to go deep into examining feedback data long enough. They were often bothered by the question which development fields and targets to choose from the several prominent ones as development tasks. The problem was how much is much. Among staff, needed visionaries were lacking. When there were no visions at all, or they were vague, the significance and value of feedback information could not be seen in a proper light.

Since many institutes lacked a concrete development plan, which would energize activities, they were unable to use the feedback information with a sustained aspiration. Even those institutes which had a development plan (tasks, aims, means, persons in charge, resources, internal training, control and evaluation) - almost without an exception - did not define their aims precisely enough in writing. Consequently, they also failed in evaluation and were unable to give an account of results achieved (see Nikkanen, 1992a, pp. 39-44). From time to time staff members' confidence in the possibilities of development faltered. This was often due to the fact that the staff had not registered feedback data on seemingly small achievements and experiences of success. On the Doubting-Thomas -day the results were simply forgotten and discouragement took over. This could be called organizational malaise (see e.g. Argyris, 1990, p. 60).

The potential development contribution of all the staff was not utilized in every vocational institute. For example, they did not know how to, or did not want to use the feedback by others than teachers and pupils in development (see also Fullan, 1991, pp. 352-354; Ruohotie, 1991, p. 158). Bad, discouraging atmosphere at an institute, mutual mistrust and possible earlier traumatic experiences of the extent to which the feedback information had been used and of how it had been interpreted made staff members less willing to give feedback information in the future.

Many vocational institutes remained on the first level of learning as described by Argyris (1990, pp. 91-94); the way data was acquired and processed was superficial and the operational strategies used were never questioned. Year after year things were done as they had been done earlier. Too many development tasks, too long steps, heavy and large development organization, and mentally and physically too heavy a workload may have led to loss of enthusiasm and a return to the "old, familiar and safe". (Nikkanen, 1993b).

Like a bottleneck, many difficulties related to the acquisition and use of the feedback (/evaluation) data slowed down or even like a plug hindered the internal development of an institute. In fact, a more proper image here could be a bottle with many necks, which would better emphasize the many viewpoints from which the problems became visible. The worst bottleneck is collecting and processing feedback data. A learning vocational institute needs a lot of feedback data, which ought to be diversified, both quantitative and qualitative. The collecting and processing of the data is laborious, time consuming, and expensive, if traditional methods are used. The traditional way often means a delay in producing the reports so that they become out-of-date and neither have any interest for everyone nor lead to actions intended and anticipated. The point here is that in vocational institutes it would be reasonable to use all technical know-how available. It is of no use to make manually and in a rather complex way anything, which can be done easily by other means. This suggests way to solve many existing problems. Analysis of development needs should be carried out on the terms of the staff and using technological devices available. Such a system for a computer already exists. It is designed on the basis of plan developed originally by the author (see Nikkanen, 1992a, pp. 15-19).

DISCUSSION AND IMPLICATIONS

Many of the problems which are to be seen and mentioned in above Chapters are intertwined in some way or another. Problems are fixed only by solving them. Moreover, solving smaller problems at first gradually improves problem-solving skills. Theoretical and practical knowledge concerning development is needed for an individual staff member's own development and growth into a change agent. Reflective examination of own activities and questioning former operational strategies and tactics inevitably lead to more active acquisition and use of feedback data.

Enlightened conversation is one of the most effective methods for development. It can combine the thinking and competence of all members of the community. Through reflective action and learning from experiences, a work community learns to question the operational models and strategies it uses, and also to increase its future readiness. In this way, a work community can develop abilities to recognize early enough those processes that progress in a deceptively slow pace but eventually become threats.

At the consultations carried out by the author it has continually been found important to emphasize the advantage of solution-seeking approach over the fault-finding one (see Furman & Ahola, 1992, pp. 23-29). Recognizing the strengths of an institute helps also in treating development targets - weaknesses and problems. Positive feedback is approved from any source but the acceptance of negative feedback depends on the qualities and status of the source (see e.g. Ruohotie, 1991, p. 166; Wiio, 1974, pp. 93-97). The acceptance of positive feedback is emphasized especially with emotional feedback. According to Wiio (1980, p. 240) people tend to avoid internal conflicts. Therefore they prefer pleasant and useful information to unpleasant and useless information. You reap what you sow.

In quality development, which is a change process, the essential thing is commitment to it. If we seek self-improving processes and results of good quality, we must concentrate on the expectations of clients, and on exceeding them as well as on improving those processes that yield ever better results (Åhlberg, 1994, p. 70). It has to be noted that internal clients include the members of the work community and the students as well. Ultimately, the developmental measures relating to education aim at improving the quality of teaching-learning situations. Åhlberg (1994, p. 72) points out the quality of teaching and learning, which he thinks has been left 'implicit' in quality development.

Quality has been considered expensive. Today we can see that the costs are even higher, if quality is decreased or there is no quality at all. As a matter of fact, quality is free of cost. For example Senge (1990, p. 65) says that ..."all the ways the increasing quality and lowering costs could go hand in hand, over time". It would be important to discuss the relation between teachers' fiscal and quality accountability. A teacher is accountable in both ways in his/her work, but how is the discharge of this accountability defined? We can think that each staff member has a fiscal accountability irrespective of the school's economic situation: No matter what the resources, staff members are responsible for using them efficiently. Fiscal accountability is an aspect that always belongs to work. It calls for an economical and reasonable, resource-minding approach to work. Economic responsibility is a quality pertaining to individuals and in the future even more so, and more importantly, also to groups. It relates to people's reflectivity and experiences. Apart from finance, being economical also refers to rationality and efficiency. Accountability for quality, again, is related to the goals and objectives of actions. Demanding objectives - and thus processes and results of good quality - cannot be reached if the resources and operation environment are changed to an unreasonable extent, e.g. by an economy drive (see Nikkanen 1993a, 1993c).

A purely technical approach is a serious threat for quality development: establishing a quality system and introducing a handbook of quality does not guarantee that quality development is progressing smoothly. Some organizations are having difficulty with both the ISO 9000 and Total Quality Management (TQM) approach. Some reasons for problems are, e.g. inadequately planned processes, lack of confidence in prepackaged and mass training programs, diffuse implementation, hidden agendas, insufficient communication, deteriorating relationships, limited commitment and support, limited resources, overemphasis on tools, measurement paralysis, simplistic views of change and cultural transformation, and political pressures (Liebmann, 1993; Lozier & Teeter, 1993; Marchese, 1993; Yankello & Flaherty, 1993). "Before higher education proceeds further with its use of the Total Quality Management (TQM) approach, it should examine TQM mistakes and accomplishments by previous users in the business sector, then create its own model for appropriate and effective TQM application" (Brigham, 1993). The same applies also to vocational institutes; in this article, however, 'learning organization' covering a broader context is preferred to TQM.

Human resource development (HRD) has got more and more attention in recent years, as different organizations struggle with ever-increasing environmental turbulence. For instance, Niemi (1992, p. 2) recommends that "to deal with these circumstances, organizations must give to HRD a central place in their mission and goals, and begin transforming themselves into a learning organization. There is no shortcut to success in this process, neither. Also in the vocational institutes, the quality development work aims to establish a change from haphazard and intuitive actions to more systematic and more conscious strategies. It is a question of a transition process from analyzing the facts of the present state to envisioning future states (see Nikkanen, 1992b). For a vocational institute, each of the above described qualities of learning organization may represent one part of the vision, the goal it is aiming at, but in respect to which quality it is still in the fact-finding state. In other words, we should get from the moment or state A to the moment or state B. The transition itself, which often readily brings up an image of linear progression, could be illustrated by e.g. change trends described by Kauffman (1976, pp. 79-96). These trends provide a many-sided image of how changes also in practice take place in more than one way.

A learning organization, seen as a whole, has been loaded above with many kinds of competencies. But on the other hand, also the society, a part of which an institute is, constitutes a whole. Consequently, the society can also be expected to apply systems thinking: the decision makers should in all possible ways facilitate vocational institutes' learning efforts and by no means hinder them. External expectations are unreasonable if an institute's development schemes are shaken too vigorously, e.g. on the grounds of unfinished plans. If the members of a work community see no sense in their work and feel unsafe, they are not capable of such a creative approach and performance that will be expected from them in the future. The change agents and work communities in the field need to be given time enough to adapt themselves to each new "theme". In a wavering progress, where the movement may seem to be the main thing, it is difficult to motivate people to come on and commit themselves even to well-founded projects. As Senge (1990, pp. 7-8) puts it: "We get damn little of their energy and almost none of their spirit". Taking a different view, from the individual to the organization, Senge states without hesitation that surprisingly few adults work to rigorously develop their own personal mastery. Then he gives a good advice: "the core leadership strategy is simple: be a model. Commit yourself to your own personal mastery". The present author would like to expand this idea to concern any work. The issue is continually important despite the fact that in future developmental work the main focus will be on teams and their needs instead of individuals.

Finch (1994), in his presentation at the University of Jyväskylä, dealing with high-performing workplace (HPWP) and research of vocational education, made a point "as goes the firm, as goes the country" and that many institutes are factories dedicated to mass production. When discussing the relation between institute-based and work-based education, he stated that vocational education is at the crossroads facing crucial questions: To what extent should education respond to the challenges of HPWP? In what way should education be changed so as to meet the challenges that worklife presents? He gave also at least partial answers to these questions implicitly as he described Deming's (1986) ideas about total quality management (TQM), quality improvement technology, and high-performing workplace (see also Finch, 1993, p. 15; Steel & Jennings, 1992, pp. 17-26). The qualities he mentioned in this context were the same that characterize learning organization: holistic view, systems thinking, empowered teams, continual development, efficiency, quality, etc.

Pedler et al. (1991, p. 2) point out that they cannot take anybody out to visit a learning company (organization) or bring a blueprint of what worked elsewhere - it is not like that. The magic of the learning company has to be realized from within. The key word is 'transformation' - a radical change in the form and character of what is already there. The main message of the discussion on learning organization earlier in this article has already been aptly phrased by Fullan (1991, pp. 353-354): "The only solution is that the whole institute - all individuals - must get into the change business; if individuals do not do this, they will be left powerless. ...The only way out of this dilemma is for individuals to take responsibility for empowering themselves and others through becoming experts in the change process". In self-reforming learning organizations the development continues. On the other hand, Toffler (1985, p. 174) also remarks aptly that it is always easier to be an outsider, full of general ideas, than be present as an individual who has to find means to implant the thoughts and ideas into practice.

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APPENDIX 1

Table 1. *Development Needs Analyses Conducted Among the Personnel of Vocational Institutes. (n=1258)*
(1=Strongly disagree, 2=Disagree, 3=Hard to say, 4=Agree, 5=Strongly agree)

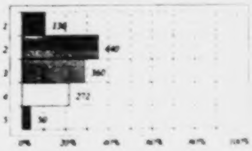
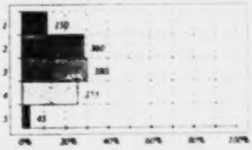
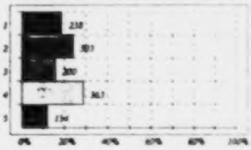
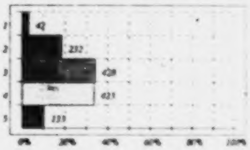
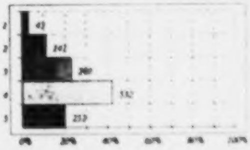
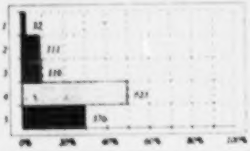
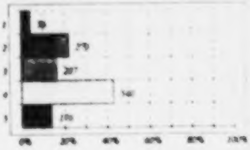
Development field	**Variables**	**Results**
The aims and goals of the institute	The whole staff in this institute is taking an active part when we are striving for the goals we set together.	
Managing the institute	The general management culture in this institute is encouraging.	
Selecting and guiding the staff	A new employee gets too little guidance in the beginning.	
Staff training	Dealing with staffs needs for inservice training is not systematic.	
Job safety and working conditions	Mental health and safety at work have not received sufficient attention in this institute.	
Characteristics of work	My work is meaningful.	
Roles and division of labour	Tasks are not sufficiently planned together.	

Table 1 (continued)

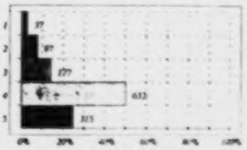
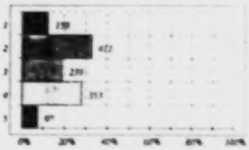
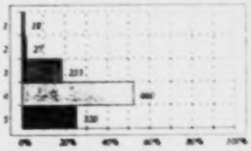
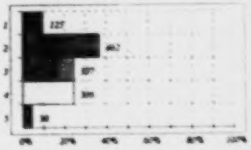
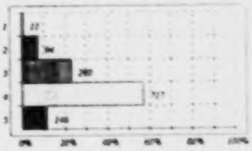
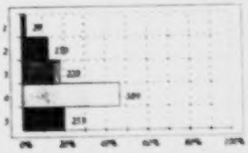
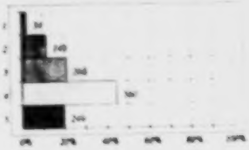
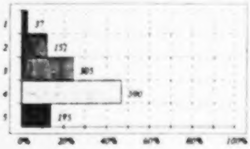
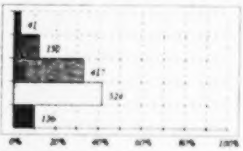
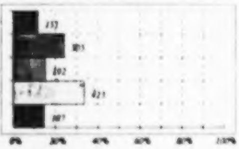
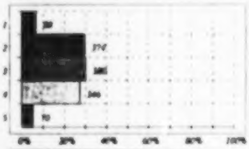
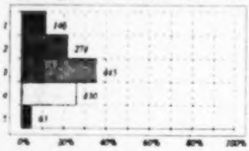
Work motivation	I feel enthusiastic about my current tasks.	
Co-operation	We have a good spirit in this institute.	
Problem solving and skills needed	The staff members should discuss more also about what the ideal state of affairs would be like that the whole work community could find satisfactory.	
Communication	Interaction is open in this institute.	
Feedback	I would like the work community to give more feedback about my work.	
Innovativeness of the staff	Many staff members are sticking to their old work habits.	
Reward system in the school	Rewarding for good work is arbitrary.	

Table 1 (continued)

Relations between different staff groups and pupils	Students should be given a more prominent part when teaching is planned.	
Relations between pupils	I have noticed that some students are picking on other students in this institute.	
Physical and material resources	The premises for teaching in this institute are up to date.	
Interaction between the school and the community	This institute shows little interest in its surrroundings.	
Economic resources of the school	Financial management lends good support to the main task of this institute, i.e. education.	

CORE COMPETENCIES OF LEARNING ORGANIZATIONS

Juha Mäenpää

ABSTRACT

Vocational institutes have attempted to develop their competencies so that they would match the need of work life and could, for their own part, renew work practices. The central tasks of vocational education have often been considered transmission of information and "producing" professionals with as wide knowledge as possible. The development of vocational education is facing new challenges: Industrial jobs have become more complex, and information tends to be outdated very quickly. Apart from the need for individual growth, also the development needs of a team or a group as well as the organization's learning abilities have been taken up in discussion. In the future, an essential part of professionalism will be the capability to develop as a member of an organization. Improvement of core competencies is becoming a central development area in "learning organizations". This article discusses the concept of core competence and the connections between individual and organizational learning. No clear distinction between educational and business organizations has been made, deliberately: Vocational institutes have their responsibility for what kind of learners they send out to society.

Descriptors: *core competence, learning organization*

BASIS FOR THE DEVELOPMENT OF VOCATIONAL EDUCATION: OPEN DIALOGUE

The society is changing and the school system is expected to change accordingly. When the change is systematic, it is assumed that the direction of change has been determined and the community in question has the ability and motivation needed. A principle of the original socio-technical view is that an organization seeks balance through change (Emery, 1959). Reaching balance often means sticking to existing structures, a desire to control one's environment in a safe and familiar manner.

Keeping up with the continuous change calls for constructive questioning; open dialogue within the work community and between the work community and various interest groups. Dialogue between vocational education, work life and research gives better chances to understand the possible worlds of the future. Several researchers (e.g. Nikkanen, 1989; Senge, 1990; Argyris, 1992) have considered dialogue or enlightened conversation the most important means for organizational learning. We need a common view when envisioning the future, in order to choose, from the many interesting alternatives, those development paths that would eventually benefit the whole society.

So far, research findings on vocational education have been used only little when developing business organizations in Finland. On the contrary, numerous experiments at vocational schools have been almost directly "borrowed" from the Finnish and foreign business organizations: i.e. profit management, process management, and quality circles. In terms of accountability, at least, educational organizations differ from business organizations: In business, the losses caused by mistakes are often to be seen and they are more tangible than the mistakes concerning teaching methods or operational strategies in educational institutes. In schools, it has been possible to give outdated information, and not only in history. How should the line between relevant and irrelevant information be defined? The skill to unlearn and question previous knowledge is becoming increasingly important also in educational institutes. A remarkable portion of knowledge needed in work is involved in various social processes. Rejecting outdated knowledge is easier than changing the practices adopted in social systems.

In connection with projects dealing with the quality of work life (QWL), also the issue of quality of thinking (QTL) of the work community members has been brought up (Johne, 1985; Amabile, 1990; Purser & Pasmore, 1992). Transferring, storing and unlearning of information is not possible repeatedly on a random basis in a flood of information. For an organization, meta-level competence, i.e. the ability to recognize, develop and combine its own areas of competence, gives possibilities to reject irrelevant information. It is economical to limit one's knowledge. Then the organization does not have to "waste its energy" on secondary resources.

Reflection, for its part, clarifies the meaningfulness of functions. It must not, however, become a fault-seeking brake mechanism that hinders intuitive and creative build-up of knowledge. To be able to collectively improve information handling, the organization may need to have both linear and unlinear relation to time. Purser and Pasmore (1992, p. 66) state that a new "socioecological paradigm is founded on principle of dynamic synchronization, which regards human beings as co-creative participants in temporal process that must continually balance and value both reflection and action, divergence and convergence, thinking and doing, and subjective and objective worlds".

Learning together the skills related to social competence in a work community presents new challenges to vocational education. The learning communities in vocational education are experimental laboratories, where sharing of new knowledge begins with applying it to the staff. In Finnish vocational institutes, it has been consciously emphasized during the recent decades that the staff equally includes teachers, students and kitchen workers (Nikkanen, 1992, pp. 21-22). Learning to learn together is possible only through practicing together.

The dialogue between vocational education and work life requires a common forum for discussion, and time and motivation to go into new things. In the following, a sector of development of a learning organization, i.e. core competence and its applicability in Finnish vocational education will be discussed more closely. For instance, training events by a Finnish company, Odin-Teach Consultants, have provided a platform for this kind of discussion since 1993. Exchange between teaching staff of vocational institutes and researchers studying education and business life, has specified the subdomains related to collective competence. An interesting feature in this dialogue has been that new things are given time to get a footing.

FROM INDIVIDUAL'S COMPETENCE TOWARD TEAM COMPETENCE

Senge (1990, p. 6) states that "learning organizations have been invented but not yet been innovated". Despite all studies made during the last few decades, relatively little is known about an individual's learning process. Kolb's (1984) model of experiental learning is one of the most general ones, and it has been modified by many researchers.

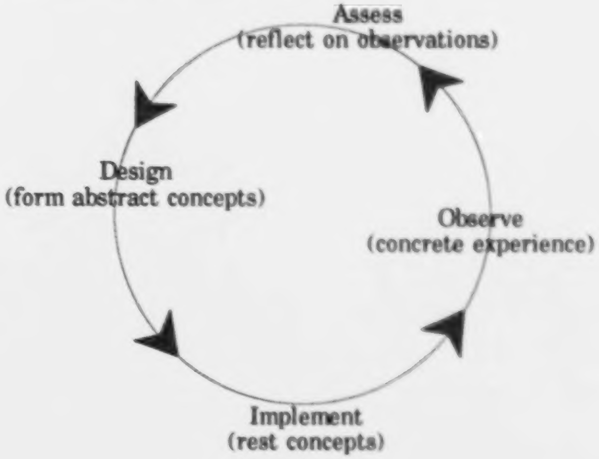


Figure 1. A Modification of Kolb's (1984) Learning Cycle

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Kolb's model includes the idea about insightful and reflective action. Learning process is partly unconscious and the results may be partly unanticipated. Formal, nonformal and informal learning involved are conceptual and/or operational by nature. Operational learning cannot be distinguished from conceptual learning. The interrelation between know-how-knowledge and know-why-knowledge varies in different stages of the learning cycle. Commitment to the selections already made guides the experiental learning process. Experiental learning should be evaluated as a whole, and critical assessment and reflection should not focus on minor details at the cost of the whole. In addition to what-and-why knowledge, experiental learning also entails know-when knowledge, i.e. the skill to find the right time and rhythm for teaching and learning.

Although the actual learning process of an individual is different from organizational learning, certain analogies can be made and organizations considered as living organisms. Kim (1993) has developed a model that combines individual and organizational learning and he ends up suggesting, based on the ideas of Argyris and Schön (1978) and Senge (1990), that the combining links between these two types of learning are mental models.

According to Senge (1990) mental models are basic assumptions that guide an individual's and an organization's actions and they are manifested in behavior. Argyris and Schön (1978) has shown that no profound learning takes place, unless the factors on the level of basic assumptions are affected. Such factors are, e.g. culture, attitudes and beliefs. Argyris has presented a model of single-loop and double-loop learning. Single-loop learning occurs usually in situations where there is no questioning and the so-called theory-in-use is always valid, no matter what is the espoused theory, i.e. how the people describe their behavior.

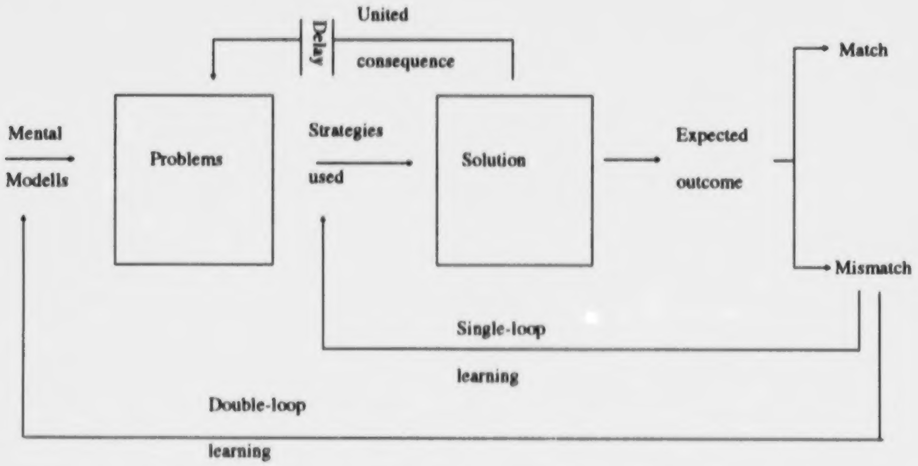

Figure 2. *Single and Double-Loop Learning (Argyris, 1992, p. 8)*

Argyris and Schön (1978, p. 9) wrote about organizational learning: "There is something paradoxical here. Organizations are not merely collections of individuals, yet there are no organizations without such collections. Similarly, organizational learning is not merely individual learning, yet organizations learn only through the experience and actions of individuals. What, then, are we to make of organizational learning? What is an organization that it may learn?" The learning processes of an individual and an organization have fundamental differences and organizational learning cannot be approached using individual learning as a metaphor. In addition to conscious competencies, there has to be tacit knowledge in the organization.

March and Olsen (1975) make a distinction between individual and organizational learning in their model. According to that model, an individual's actions are tied with his/her own beliefs. This leads, in turn, to organizational actions, which induce certain reactions in the organization's environment. The cycle is closed when the external reactions influence the individual's beliefs. If the environment is stable, the individual has no need to change.

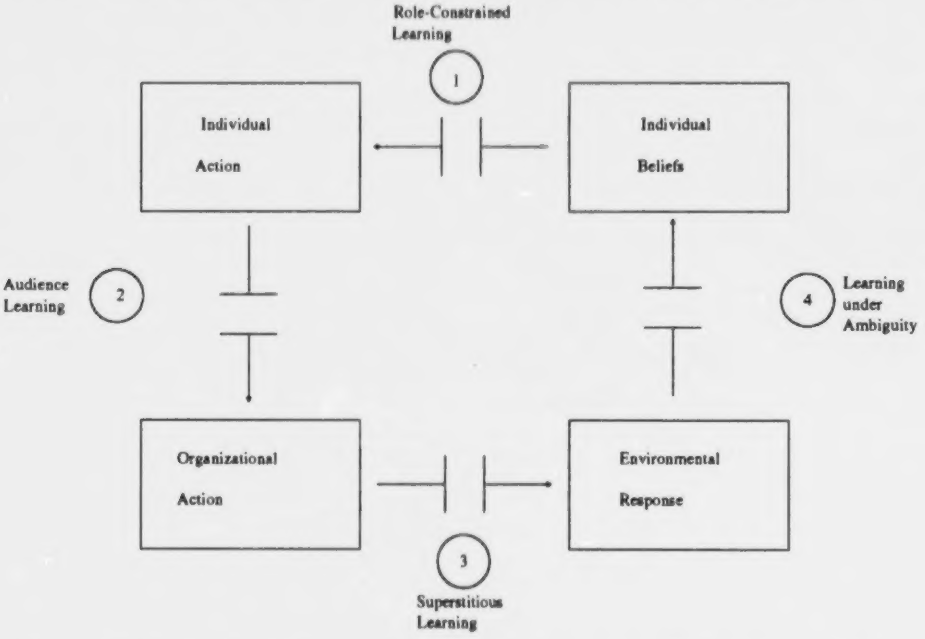
Role-Constrained Learning
1
Individual Action
Individual Beliefs
Audience Learning
2
4
Learning under Ambiguity
Organizational Action
Environmental Response
3
Superstitious Learning

Figure 3. The Model of Organizational Learning by March and Olsen (1975)

The model by March and Olsen also includes an incomplete cycle, in which the external changes and the information available and acquired do not match with the changes that have taken place in the organization. Role-constrained learning describes a situation where an individual's learning has no impact on his behavior. Audience-learning is in question when an individual reacts ambiguously to the organization's actions. In superstitious learning an individual's and an organization's realities differ from each other; the organization learns but its actions and learning results do not correspond with the surrounding reality. Learning under ambiguity refers to the situation where external reactions bring about operational but no conceptual learning. To be effective, organizational learning need to involve both operational and conceptual learning.

The chart by March and Olsen (1975) depicting organizational learning includes no linkage between individual and organizational learning. In their model, individual learning is guided by external reactions. It is as justified to consider that also individuals and groups influence the external reactions (see, e.g. Mintzberg, 1983). What is common to all models of organizational learning, even if they represent different paradigms, is that they focus on how knowledge gets "refined" in various stages of the learning cycle. The literature that regards organizational learning from the information flow point of view, can be divided into five categories, according to Huber (1990) and Dixon (1992): a) information acquisition, b) information distribution and interpretation, c) making meaning, d) organizational memory, and e) information retrieval. Most definitions of organizational learning emphasize one of these categories.

Information acquisition and distribution, development of know-how and competence, are central processes in a learning organization. The function of these processes is to "glue together" the various activities and basic principles of the organization. According to Senge's (1990) views, there are five basic and mutually essential principles underlying a learning organization: systems thinking, personal mastery, mental models, shared vision, and team learning. When describing learning organizations, Senge (1990, p. 3) considers them as places where individuals seek to expand their abilities in order to achieve together the desired results. To adopt new things and thinking models, it is necessary to see things in a new light. There are spokesmen for learning organizations and "knowledge-creating companies" both among industry and researchers. There are some encouraging examples of learning organizations but the expectations may be too high. The concept formation of learning organization is only in the beginning. Nikkanen (1992) points out that a 'learning organization' should be considered rather as a frame for development strategy than a theory.

Kim's (1990) proposal of shared mental models as a link between individual and organizational learning and information management shows how approaches of cognitive sciences are joined with the research of organizational behavior. According to the cognitive organization theory, the models of social cognition are formed in interaction situations taking place within an individual, between individuals and between groups (Wyer & Srull, 1986; Sims & Gioia, 1986).

The behavioral-scientific paradigm of the theories concerning organizational behavior is changing its foundation from the stimulus-response (S-R) and stimulus-organism-response (S-O-R) to the form of O-S-O-R (Markus &

Zajonc, 1985). The change is not about adding new letters only, but about the idea, which is gaining ground among educational scientists, that behavioral phenomena cannot be explained merely by studying and explaining the causal relations between individuals and their environment. Individuals and groups form their environment and react to stimuli from their environment in accordance with their mental models (see Heikkilä, 1987; Leino, 1987). On the other hand, Ilgen and Klein (1989), in their extensive article about organization studies, consider that so far the "revolution" of cognitive sciences has had quite little to offer to the research of organizational behavior. Often, it has been attempted to translate the concepts of cognitive organization theories into "the language of organization" only. Without a deeper theoretical foundation, the contribution of cognitive organization theories to organizational theories and practical applications will remain negligible. Ilgen and Klein (1989, 346) state: "Without such advances, cognitive processes will join a long list of passing fads in OB."

Organizational learning has been seen as a key asset in the 1990s, firstly, because the work contents are changing rapidly (e.g. Zuboff, 1988; Ruohotie, 1993). On the other hand, collective learning in an organization, which is manifested in the organization's core competencies, gives the organization an advantage in competition (Hamel & Prahalad, 1990). Thirdly, in an environment that is rapidly changing, an organization has to learn to keep pace with its environment and to change and adapt itself at least as quickly as the changes in its environment take place (Peters, 1988; Vaill, 1989).

CORE COMPETENCE IS COLLECTIVE COMPETENCE

In the late 1980s, organizations' core competencies and organizational learning have been the two perhaps most central concepts associated with staff development in business organizations. The analysis of core competencies has got theoretical influences from socio-technical and cognitive organization theories. The theory of core competence has been developed also in studies concerning the successfulness of business organizations (e.g. Prahalad & Hamel, 1990). The research on learning organization and core competence derives from observations made in quality circle studies in Japanese companies. Many Japanese companies seemed to have an ability to take their competitors by surprise time after time with their unexpected products. It was assumed that what was underlying these surprising end products was the way the Japanese made competence belong to whole organization through staff development.

The primary goal of staff development in an organization is to improve the organization's productivity by enhancing its competencies. In the organization, the existing competencies and those set as goals can be analyzed from the perspectives of a) individual competence, b) group competence, and c) organizational competence. Furthermore, organizational learning can be considered either as something static, existing or as competence involved in the internal and external processes of organization, i.e. ability and readiness to change. When developing an organization, the aims are to enhance the competencies of the organization, to improve learning atmosphere, and to remove obstacles of learning. At the level of organizations and groups, the performance of individual members of the organization does not mean the same as group performance. Individual performance and learning is a necessary but not a sufficient condition for organizational learning (Argyris & Schön, 1978, p. 20).

The effects that the development interventions carried out in organizations have had on the level of individuals have been examined in several projects assessing the needs for development and growth (see Ruohotie, 1993). As the tasks of an organization have become more complex, it is more difficult for an individual worker to master the whole competence area needed in the job. The real or virtual unpredictability of changes in the environment, fast renewal of information, demands for efficiency, and the obligations of strategic decisions have all increased. It does not suffice anymore that an organization's abilities to change and adapt itself could be maintained by merely satisfying individuals' needs for growth. Statements that emphasize the importance of staff as the most valuable resource of the company, have often remained mere empty phrases that objectify the personnel. Santalainen (1991, p. 127) notes that human resources should not be objectified and personnel, according to him, cannot be considered as a resource but it is the personnel who has resources.

Matching the needs and demands of an organization and its members means eventually seeking a balance in a continual process of change. Balance in an organization does not mean stagnation, however. Nikkanen (1992, p. 8), in his development research on educational institutes, has described such institutes where development projects have been halted and people have returned to old practices as "lying at anchor". Those organizations that have no clear aim for their operations, he calls "drifters". Self-reforming and self-directed organizations deserve the name of "seafarers" in his terminology. Such organizations have understood the significance of internal development for the very existence of the organization. This kind of description of different kinds of organizations is a simplification, of course. Presumably, most organizations contain activities with features from all these "sailing styles". However, depiction of this kind aptly illustrates the direction of the change process; whether the organization develops along with its striving for change or whether its efforts are only apparent or even serve regression.

Collective learning, organizational learning and learning organization have been brought up as central frameworks and goals for organization development (Argyris & Schön, 1978; Senge, 1990; Nikkanen, 1992 and 1995). Senge (1990) sees that a "learning organization" is capable of setting its objectives higher than on the level of minimum competence. In contrast to an organization that has chosen a survival strategy, a learning organization is, according to him, able to sustain a process of learning that can create a new know-how. In an organizational development process, it is attempted to join the new know-how to prior competence. Without thorough awareness of an organization's competence areas, its development easily becomes just acquisition of new, separate pieces of information.

The Concept of a Core Competence

The concept of core competence is associated with, e.g. the following meanings: an organization's collective competence, complex social competence; ability to communicate and distribute competence vertically and horizontally within an organization and between interest groups, the ability to combine existing and possible competencies in an innovative fashion and create new, significant knowledge of either the processes or products of the organization. Building up core competence in an organization is a complex learning process, the importance of which is vital only for the organization in question. (Hamel & Prahalad, 1991; Teece et al., 1990; Leonard-Barton, 1992).

Leonard-Barton (1992) gives a summary of researchers who have defined core capabilities and other expressions such as distinctive competence (Snow & Hrebiniak, 1980), core or organisational competence (Prahalad & Hamel, 1990; Hayes, Wheelwright & Clark, 1988), firm-specific competence (Pavitt, 1991), resource deployment (Hofer & Schendel, 1978) and invisible assets (Itami & Roehl, 1987), which are used almost synonymously.

From the viewpoint that stresses core competence in organizational learning process, organization is seen as an open system. Awareness of core competencies is considered a possibility through which an organization's competence can be enhanced and organizational learning given a direction. Organizational competence cannot be assessed as competencies of individuals nor can collective competence of the organization be traced back to its individual members (Schein, 1985). Prahalad and Hamel (1990) define core competence as the shared learning ability of an organization, where various production skills can be coordinated and different technological trends combined. In addition, they list features related to core competence:

① Core competence is connected with the ability to communicate and commit to work across organizational boundaries.

② Core competencies develop when they are used and their use expanded.

③ Core competence is cumulative competence that induces innovations and a new know-how.

④ It is difficult for competitors to imitate the core competence.

⑤ A medium-sized organization can usually have only two to five areas of the core competence.

⑥ Core competence is an area of superior competence that already exists or that has been set as a goal in an organization.

Core competence means distribution of shared, existing information and sophistication of knowledge. When developing skills and knowledge, also calling core competencies into question helps the organization reduce the illusion of superiority and infallibility. A basic principle of sustainable development is that an organization is aware of the strengths of its competencies and also the disadvantages caused by them. The development of core competencies is connected with the principle of scarcity: Knowledge about own areas of competence makes it possible that limited resources are not invested in irrelevant competence areas.

Various Kinds of Know-How

Know-how is essentially related to core competence. Habermas (1984) divides knowledge into subjective, social and objective knowledge. He says that in the subjective level knowledge cannot be shared; either sharing is not wanted or it is not allowed. Krogh and Roos (1992) have deployed Habermas' division and categorized competencies according to the complexity of tasks and type of knowledge as follows:

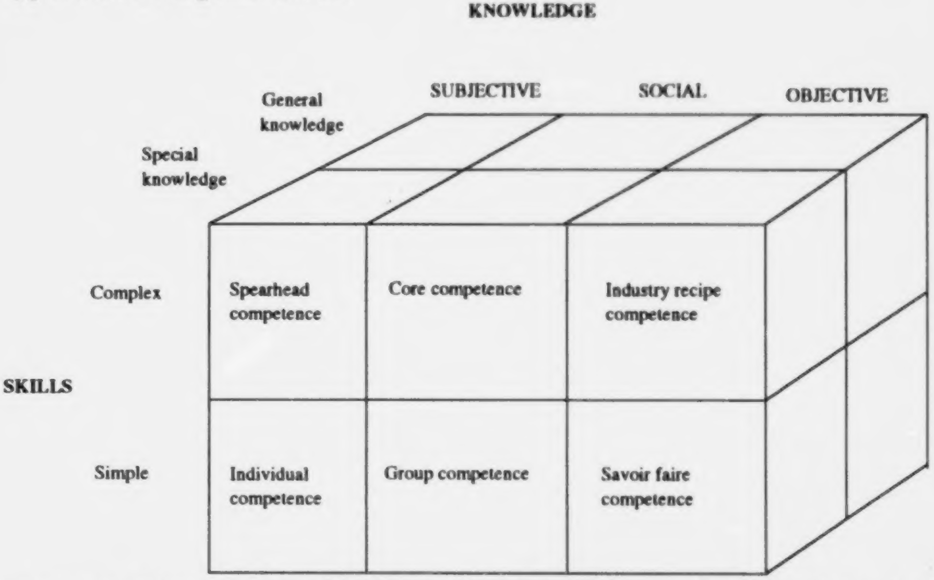
KNOWLEDGE
General knowledge
SUBJECTIVE
SOCIAL
OBJECTIVE
Special knowledge
Complex
Spearhead competence
Core competence
Industry recipe competence
SKILLS
Simple
Individual competence
Group competence
Savoir faire competence

Figure 4. *Competence in Relation to Knowledge Types and Task and Level of Skills Required. Adapted from the Model by Krogh and Roos (1992).*

Subjective knowledge: 1) Pinpoint competence in an organization is special knowledge that experts have. 2) Individual competence occurs in an organization, e.g. when an operator solves complex problems with well-known computer programs.

Objective knowledge: 3) Industry recipe competence: Some methods of a particular field of industry are widely known but difficult to apply. The competence required in a certain field of industry is institutional competence of the organization, which is shown by what strategic means are needed in order to follow, e.g. government's policies. On the other hand, acceptable lines of action for an organization can also be defined through legislation (see Mintzberg, 1984). 4) Savoir-faire competence: A combination of objective knowledge and simple tasks. Following certain general rules and methods is a prerequisite for the survival of the organization. Organizations are different in terms of how effectively they can follow and deploy legislation.

Social knowledge: 5) Core competence: An organization may comprise groups, which distribute some social knowledge that facilitates performing some complex tasks; for example, solving a difficult planning problem in cooperation between different sections of the organization. 6) Group competence: Each organization creates organizational competence, where social knowledge is utilized when solving simple or complex operational tasks.

In the "competence model" constituted by different types of knowledge and tasks, the boundaries between categories are vague and it is not absolutely clear to which category a certain type of competence belongs. Nevertheless, the approach where organizations are seen from the competence point of view, differs from other approaches, which emphasize the meaning of environment (Porter, 1985) and knowhow as a resource. "Porterian" and resource-oriented views have dominated the studies on business organizations' competitive capacity in the 1980s. Both these views consider competence as a goods or merchandise that can be bought and sold. In "Porterian" thinking, competencies can be substituted and moved. According to the resource-oriented approach, resources are restricted and not fully movable. The competence-oriented approach sees, in turn, that especially the core competencies of an organization cannot be imitated or substituted. Moreover, those core competencies are crucial only for that particular organization. How can an organization develop its core competencies, then? According to Senge (1990) and Nikkanen (1995) the only way is to strive toward a learning organization.

In the "competence model", know-how is regarded as something involved in group processes between individuals and teams rather than a quality associated with individuals or even groups. Social competence like core competence is dynamic by nature. In addition to that the competencies of different "categories" are potentials in an organization, essential to social competence is the will and desire to use the competencies for the benefit of the whole community. Purser and Pasmore (1992) criticize the inflexibility of traditional "box-like organizations" and argue that to be successful, organizations should be flexible, both in terms of their structures and knowledge production. In their opinion, especially in knowledge work the solidarity between the members of an organization is not restricted to a particular team or group but, e.g. in a research community, the solidarity is mainly global in nature.

The usage of the term 'core competence' is vague. In public discussion, it has been used sometimes to describe the qualifications of individual workers. However, in the literature of organizational development the term has been defined, almost without an exception, as collective learning. In a broader sense, core competence is regarded as an organization's ability to master successfully the social field. The difference between core competence and group competence can be compared to the difference between an expert and novice. Core competence is organizational expertise that is involved in advanced social skills and occurs at the level of groups and organizations. Core competence is rather a desire to distribute and share knowledge than "possess" it. Even same writers emphasize different aspects of core competence when using the term; sometimes it refers to organizational competence as clearly defined competencies, sometimes to advanced social skills in an organization in general. For instance, Prahalad and Hamel (1990) name the core competence of Canon as the skill to miniaturize. In the broader sense, core competence does not refer to separate competencies, skills or knowledge but it means an organization's ability to accomplish tasks just in its own typical way. Leonard-Barton describes the concept of core competence through four, intertwining dimensions: 1) workers' skills and knowledge, 2) technological systems, 3) the process of knowledge building, control and guidance included in the management systems, and 4) the norms and values associated with various skills and knowledge and also with control and production processes.

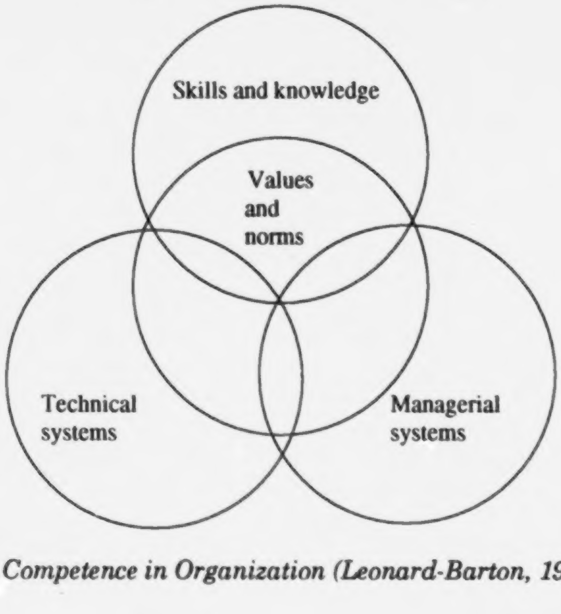

Figure 5. Core Competence in Organization (Leonard-Barton, 1992)

The model by Leonard-Barton (ibid.) includes, unlike many other models, also norms and values. Leonard-Barton mentions that in management literature values are often discussed separately. In his opinion, however, they have an essential role in the development of core competencies.

Leonard-Barton (ibid.) says that core competencies can be utilized in new projects in different ways. Some project may be simultaneously dependent on many core competencies, whereas some new projects may need no core competencies at all. Leonard-Barton argues that an essential part of using core competencies is timing: what stage of a process each competency is needed. In different processes, some core competencies are more important than others. Core competence is not a matter of being on or off but it has also certain "volume". (Leonard-Barton, 1992)

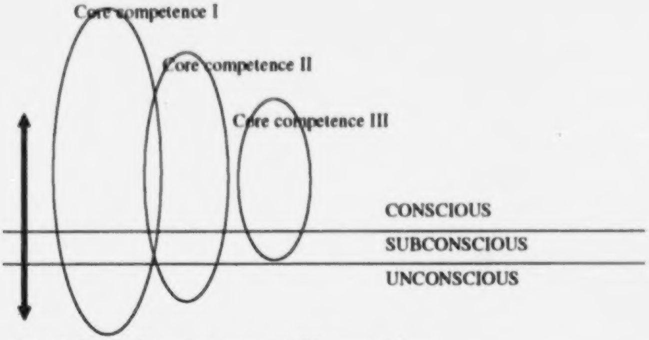

Figure 6. *Part of Core Competence is Unconscious*

Stalk, Evans & Shulman (1992) underline the process-nature of core capabilities and relation to time. They think that the successfulness of an organization should not be assessed through its achievements (end products) but through the processes where the "production" takes place. To succeed, an organization has to provide its clients with sufficient surplus value, satisfy their needs and offer them something they have never even dreamt of. Hamel and Prahalad (1990) take one step further by suggesting that it is not the appeal of market that directs various development models and entering the market but competencies.

The meaning of competence for an organization changes in relation to time and task. Allocation of competence needs, in respect to both quality and quantity, will be more difficult in the future. To aid planning, one has to choose instruments with which the "fuzzy" future can be predicted at least satisfactorily. Often the predictions are shaded by descriptions of undesired future worlds instead of more positive images of the future (Remes, 1993). Instead of planning the future in a goal-directed fashion, it seems that human communities have an inherent tendency to be good enough here and now. The aim appears to be to avoid the worst possible misfortunes for one's own part. In the history of mankind only few, if any, firm decisions have been made that tell about long-term or far-reaching planning in the collective level. Also an organization's own competence can be by-passed if it lacks the skill, desire or need to provide the knowledge work of the organization with sufficient time and other resources.

Kautto-Koivula (1993, p. 113) states that for the time being only few organizations see core competencies as factors of success. This is because collective competence is not yet respected as much as individual qualifications in organizations. Core competence comprises small parts involved in the work tasks of many people; it is not expertise possessed by few.

COMBINING AREAS OF COMPETENCE

In a creative knowledge building, the essential thing is not to have ideas but to apply the ideas creatively in practice (Meristö, 1990). In experiental learning, learning takes place by doing and by reflecting as well as by intuitively combining things and functions. None of these ways of thinking are mutually exclusive, although it is not absolutely clear to what degree reflection and intuitive thinking can simultaneously occur in a dialogue. Knowledge building includes the idea about the holistic nature of knowledge: The quality and quantity of the knowledge as well as the processes in which it is involved make up an inseparable whole. In communication, the information is mainly dynamic. Knowledge is a part of information flow. The function of active information (see Bohm & Peat, 1992) is to direct other information, or to serve as a signal. Underlying the learning of an individual, there are conscious and subconscious mechanisms that affect the learning process. Metacognition, schemata and various learning styles are forms of active information directing the learning process.

The learning style of a group is not a sum of the learning styles of its members. In various brain storming sessions, the problem-solving skill of the group is largely affected by the extent to which the group can utilize the creative problem-solving skills of its individual members and suggestions made by other groups or coming from outside the organization. The problem-solving skill of a group is rather a capability for a dialogue where the suggestions are analyzed and refined further. Eventually, a fundamental feature of core competence of a group is the ability to combine existing competencies and knowledge in a creative and often extraordinary fashion. Deviation from traditional solutions within and between groups in an organization is possible only if the practices in the organization allow for or even encourage such an unusual way of thinking and acting.

Several researchers have shown (e.g. Fisher, 1980; Poole, 1983) that the development process in a group is not linear, although Poole writes that the classical view, represented by Bales and Strodtbec (1951) for instance, about linear and phased development of organization is still widely shared. Accordingly, also information management in group or organizational learning has been traditionally assumed to follow a linear progression. Nevertheless, in a learning process information is handled, selected, analyzed and synthesized, after which it may become a part of organizational knowledge. The knowledge building process in an organization may include both linear and unlinear phases. Knowledge itself can be regarded either as rational or as intuitive. Rational knowledge is considered logical and linear, whereas intuitive knowledge is thought to include also inconsistencies and paradoxes.

When building knowledge in an organization or in a group, rational and intuitive knowledge may prove complementary. One or the other of these knowledge types may also be excluded, or rational and intuitive knowledge building may be off-balance with respect to the nature and aims of functions. Polanyi's notion (1966, p. 4) "We can know more than we can tell" comprises the idea about the enigmatic nature of knowledge. Becoming aware of tacit knowledge is often regarded as merely a positive matter in a work community. But then again, what would an artist's creative work be like, if he/she rationalized all his/her actions? Also, when seeking organizational core competencies we could ask where the line between rational knowledge and intuition goes.

CORE COMPETENCE AND COMPETITIVE ASSETS

The development of core competencies seeks to improve an organization's chances to get an advantage in competition. In competition between organizations, competence, and superior competence in particular, is an asset. Lahti (1991, pp. 156-157) describes competitive assets and efficiency as prerequisites for an organization's survival. Learning is usually associated with many positive ideas. An organization may set development toward a learning organization as its goal. In organizations, however, any "slow-motion" learning is seldom enough; learning has to be effective. Many organizations have borrowed the concept of key asset from the business world. To succeed, an organization needs to have some areas of superiority, which make the clients choose it instead of any other organization. In his book dealing with an organizations' competitive assets, Porter (1985) examines what chances the environment can offer to an organization and what kind of competitive strategy the organization chooses with respect to its surroundings. In the approach based on core competencies, the learning process of an organization has become an asset. The point in common with Porter's (1990) more recent ideas is that he regards networking as one possible way to form an asset. The perspectives remain different, however: While in Porterian thinking also networking is considered to take place outside organizations, in their competitive environment, the core competence -based approach focuses on the internal; it explores the conscious and unconscious areas of competence within an organization. Awareness of core competencies helps to determine an organization's place with respect to its surroundings and clarifies the organization's relation to prospective future worlds.

Other Side of the Coin

An organization's own competence may also become a hindrance to development. Lieberman and Montgomery (1988) have suggested that institutionalized competencies may lead to "incumbent interian" -effect in an organization's relations to its surroundings. Years ago the financial manager of Nokia Mobile Phones noted: "A company that feels and expresses that they're doing fine cannot be saved". An organization that is blind with self-sufficiency has no need to make any efforts. It is hard to give up proven methods that have worked before. When development consultants face excessive resistance toward change in an organization, they know it derives from needs to defend old positions and assumed strengths (e.g. Nikkanen, 1989-1992). Already Schumpeter (1941) noted that innovations require creative destruction. It is paradoxical that core competencies can be fostering and hindering development at the same time. Efficient learning includes the ability to unlearn matters that have become meaningless.

In a learning organization neither individual nor collective learning should be stressed at the cost of the other. Many experiments in the recent history concerning collective working have not reached the goals their supporters set. The concept of collective competence may bring up associations of socialism and communism. However, the theoretical background of a learning organization and core competence is not in ideological or power politics. Of course, information flow and knowledge building in an organization can be analyzed from the viewpoint of power as well; who in the organization has the right and possibilities to build and distribute knowledge. Murto (1991), for instance, has analyzed the works of two pioneers of collective education, Makarenko and Jones, and found out that a prerequisite for collective learning seems to be that the information primarily originates from the "grass-root level".

According to Nonaka (1991) it is harmful for most organizations to see knowledge building as a dichotomy; either the workers or the management have the power and responsibility to lead knowledge building. He has also suggested a way for knowledge building management that would apply better in a rapidly changing environment: the model of so-called middle-up-down management, where organization management's one-sided dictation (Top-down management) and excessive emphasis on workers' significance (Bottom-up management) in knowledge building could be avoided in the organization. Middle management, who acquires and distributes most of the knowledge, would have the central role. In educational institutes the definition of "middle management" is clearer than in business organizations; the central manager in the knowledge building process would be the teacher.

The results of collective learning do not always match with the expectations. Janis (1972) uses the expression "group thinking" to refer to situations where group decisions are clearly worse than individual decisions, or where the whole group has made inconceivable mistakes. When the responsibility for a group's activities is evaluated, individual members of the group cannot evade their own responsibility by hiding behind the "collective responsibility". Qualitative development of teamwork skills and core competencies is a challenge to vocational education: How could work communities be guided so that people would be ready to take responsibility for their own and for the collective learning?

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CHANGE MANAGEMENT IN LEARNING ORGANIZATIONS

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ABSTRACT

This article discusses special characteristics of leadership or management in a learning expert agency, especially from the change management point of view. Expertise in the organization sets high demands for the management: Traditional, leader-centred fashion is not sufficient, but what is needed is innovative and visionary leadership. The leader is not anymore alone leading the course of action, making the important decisions and acting as the driving force in the expert organization. Collective force is important also in management. In a change situation, leadership can be seen as a skill and will make the change happen in line with the internal and external needs. Due to the complexity of change, however, leadership should nowadays be based on shared thinking and joint efforts. Real change management can succeed only through people's understanding. Change management and leadership can also be considered as a transformative force in the work community. This involves envisioning and elaborating future images, and communicating them as well as fostering manyfaceted networking in order to enhance collective learning. The ultimate challenge to leadership is future-oriented organizational learning.

Descriptors: *change management, leadership, learning organization, expert organization*

LEARNING AS A BASIS FOR MANAGEMENT

A learning organization is developing its functions and activities all the time. It is characterized by self-adjustment mechanisms based on self-assessment. Self-adjustment means active influence and flexible reactions in changing conditions. As regards an organized group, such adjustment takes place primarily in co-operation within the group. Goal-oriented co-operation by mutual agreement is essential for organizational learning, as well. Mere division of labour is not sufficient for learning, however, but the co-operation must also be interactive. This is based on the idea that the people involved share the concepts and internalized models of work. Furthermore, this common frame of reference applies to the work of all members in the work community, or the whole organization, including also the development potentials of that work.

When an organization is striving for continuous transformation and organizational learning, it sets special requirements to the management. It is a matter of handling the management of change, so that it can be interpreted as a reformative force in the process. Change management means eliciting and strengthening impulses for change in the work community. Besides the participants of the process of change, who also have an impact on its results, it involves the developmental stages leading to these changes.

An essential part of change management is envisioning the future and communicating these visions to others. It also includes activation of the mental capacities of the personnel to elicit new thinking and working strategies and to provide impulses for organizational learning.

The most important thing in change management is to facilitate learning in the work community. It means creating such structures and contents that make learning not only possible but also active and conscious.

SPECIAL CHARACTERISTICS OF LEADERSHIP IN A LEARNING EXPERT ORGANIZATION

Leadership is usually identified with the leader. However, in a work community leadership is largely a question of common cause; thinking and working together. As seeing things as a whole, or systemic thinking, is an essential feature of learning organization, leadership cannot be something that belongs only to the leader. Also, construction of common visions is specifically a matter of shared thinking processes. Here, the will and ways to accomplish this are mainly the leader's responsibility, but the overall responsibility belongs to everyone.

In organizations like educational institutes, the high expertise of personnel has certain effects also on the management culture. Educational institutions can be characterized as knowledge-based expert organizations in which diverse fields of knowledge are extensively involved.

A learning organization of expertise is much more complicated to lead than, for example, an industrial establishment. In the literature (e.g. Sipilä; 1991; Sveiby & Risling, 1987; Eklund, 1992; Allen, 1988) the profile of expertise has been characterized in slightly negative terms. For instance, an expert typically

- has a high self-esteem
- hates restrictions of his/her freedom
- underestimates leaders on average
- is not interested in people who do not know his/her area of expertise
- respects experts of his/her own field
- is not really interested in the development of the whole work community
- is not very cooperative
- hates administrative duties
- does not like to be led
- is 'allergic' to control of his/her work
- emphasizes his/her individuality.

Differentiated expertise makes it harder to replace or substitute a person in question. It may also easily lead to distorted professional pride, which may hinder natural, smooth interaction.

According to Allen (1988), however, the features mentioned above describe mainly researchers and their values. The highlighted property is individualism, which cannot be considered as a prime factor of success in a learning expert organization. It is rather an attitude of traditional free professions, hindering modern development in expert organizations. "Do what you like to do", as a principle of leading, can result in unhealthy competition, mutual envy and, rejective atmosphere. If this is the case, it is vital to overcome these attitudes in order to yield positive results in the learning exper organization. Contributing to a goal-seeking, a community of expertise must be regarded as an inherent part of an expert's work.

If we think what is expected from a change leader in an expert organization, in particular, we can list things that are no longer sufficient elements of competence as such:

- technical know-how
- impeccable and mechanical mastery of administrative duties and routines
- solving of problems in an organization
- skillful interpretations of difficult norms
- preserving the old and safe and mastering all the concrete things
- being a formal part in the multilevel administration system of public education

This all is, of course, implementation of historically developed administrative policy, which may have earlier been rewarded by the power of tradition and the intrinsic value of the conservative control system. Today, also the external control system is expecting a lot from changes in management culture, although it is not that clear what kind of changes would be desired.

Strategic management of an expert organization has been compared with driving a car with one's hands off the steering wheel: Acceleration or braking is possible, but choosing the direction is another thing. Experts are known for their self-directiveness. They choose their methods, tasks and co-workers autonomously on the basis of their own values. Especially, if there are no shared visions in the organization, action is driven by the expert's own motives. If a joint vision has been outlined, the experts, when forming their strategies, tend to follow those lines and their estimation of changes in the environment. Specialists do need freedom to a certain degree. Systematical and analytical management does not yield good results if it fails to emphasize innovative talents and developmental skills.

Relatively speaking, in learning expert organizations there are many cases where the need and chances for leading, at least in the traditional sense, are diminished.
These factors are as follows:

- high professional skills and experience of the members in the organization
- tasks are found challenging and interesting, and the motivation to learn new things is strong
- high professional ethics, professionalism and collegiality
- the work community is made up of small specialist groups
- high self-confidence and self-directiveness of the members in the organization (cf. Birnbaum 1988, Eklund 1992).

HIGH DEMANDS FOR MANAGEMENT

In an expert organization where organizational learning is supported the demands for leadership are great. The leader has to be able to

- act as a model in a way it creates commitment and enthusiasm to development (cf. Senge et al., 1994)
- create encouraging atmosphere (cf. Ruohotie, 1993)
- combine often contradictory aims and expectations of the educational institution and its members (cf. Arvonen, 1983)
- have confidence in his organization's expertise (cf. Arvonen, 1983)
- arbitrate conflicts and tensions, which often occur in expert organizations
- tolerate creative diversity (cf. Heikkilä, 1994a)
- tolerate uncertainty (cf. Heikkilä, 1994b)
- with his/her personality create faith and confidence for the future among the personnel (Kivistö, 1991)
- create a high external profile for the educational institute
- be professionally respected as a leader of change by the whole work community (Kivistö, 1991)

Heikkilä (1994b) lists several properties that the leader in a learning organization should have:

Who would have

- such inner stability that he/she is able to act in a realistic way in unpredictable and complex changes
- an open mind to explore new processes of change again and again and the abilities to be constantly productive and self-renewing
- capability to create bold new visions and realistic strategies and carry them out
- ability to outline broad perspectives and skills to communicate them to others in a readily understandable and motivational fashion
- skills to create an atmosphere of security and psychological freedom for the members of the organization, so as to give everyone a chance for holistic self-realization irrespective of academic degree and hierarchical levels.

The above-mentioned requirements are so demanding that no one person, neither the leader nor any other member of the organization, can fully meet them. Nevertheless, the leader has always the main responsibility for the features described above. In any case, the expectations are in accordance with those requirements. However, as the management also includes the dimension of shared thinking and working together, it is only fair to face these demands together, as well, and in doing so also to learn together.

Senge (1990) argues that a learning organization calls for new views of leadership. The leader is responsible for building up such an organization that its members constantly improve their skills to understand complexity, to clarify visions and to improve models of shared thinking and action models. In other words, the leader is responsible for facilitating continuous learning. Senge stresses the significance of overall planning with respect to the role of leader. This overall planning differs from the traditional rational and linear planning. However, the essential things are formation of visions and strategies as well as planning of organization's learning processes so that learning matches with the reality. Senge sees that in a learning organization, the key factor in the leader's role is the future orientation both in thinking and actions. The leader has to be a visionary who shows the way, although the direction must be based on joint visions.

Senge characterizes the leader of learning organization also as a "teacher". It does not mean, however, that the leader would "teach" the staff, for instance, to create a future image of the organization. Rather, the leader's task is to help the members of the work organization to develop systemic understanding. Thus, the leader has to be able to conceptualize his/her strategic thinking so that it will become public knowledge, open for challenges and further development.

LEADERSHIP: INFLUENCING ON AWARENESS OF CHANGE

A leader of change should focus his/her thoughts on questions such as "Where am I now?" and "What is my role regarding the following central issues of planning and leading in change?" (See Figure 1.)

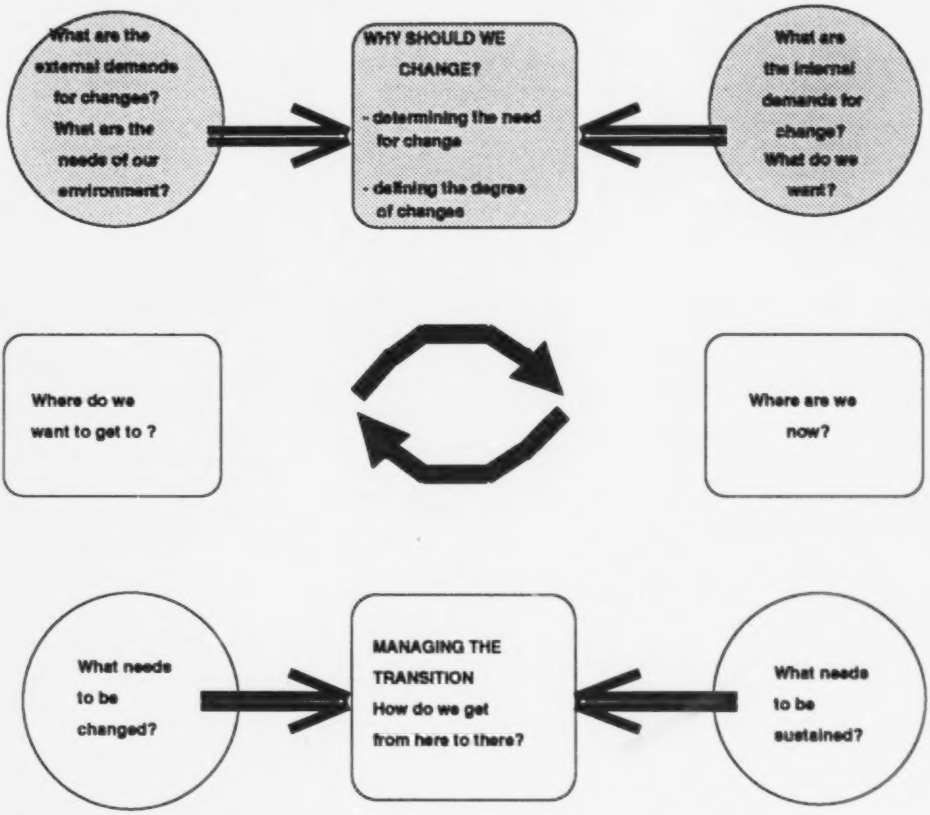
What are the external demands for changes? What are the needs of our environment?
WHY SHOULD WE CHANGE?
- determining the need for change
- defining the degree of changes
What are the internal demands for change? What do we want?
Where do we want to get to ?
Where are we now?
What needs to be changed?
MANAGING THE TRANSITION
How do we get from here to there?
What needs to be sustained?

Figure 1. Planning and Leading of Change

Solving these questions together with a school community is actually change management at the same time. In a change situation, leadership can be considered a skill and will to bring transformation in meeting the needs. Uncertainty in change, especially, seems to make the role of the leader more significant. In particular, it is a matter of leading in such a way that promotes psychological freedom and security. In other words, change management should allow people to break the restrictions of earlier systems without feeling threatened as an employee, a human being and an innovator, etc. (Heikkilä, 1994).

The most important thing in change management is to have influence on people. Here, pointing out the essence of changes and making them comprehensible is crucial. A person is not merely technically implementing the change, but he/she is also reflectively adapting it to use, and at best, becomes a true agent of change.

Once the entire school community has become aware of the motives behind changes, an essential condition of change has been fulfilled. When a work community has become aware of the essence of change, it

- knows the reasons behind the realization of changes
- understands the objectives of change
- understands the consequences if the change did not take place
- is well aware of the significance of change for the community itself
- has an idea of implementing the changes.

Although it is not possible to foresee all the consequences of change, the whole school community should have at least a general idea of it. Real change management can succeed only when the people involved understand it (Lyytinen et al., 1991).

Because earlier solutions are no longer valid in changing situations, it is necessary to support a positive atmosphere where creative solutions are desired. These solutions may create new problems and thus new learning opportunities, as well, so that the persons involved outline the changing reality and produce new solutions in the new context.

MANAGEMENT CULTURE IN LEARNING ORGANIZATIONS

Leading of development in an educational institute is always a case of its own. Adopting certain roles or principles does not guarantee that the change will take place as planned. However, it is important that the leader of an educational institution aims at developing such a school culture that is open for development. In such kind of institute

- there are clear individual norms, values and expectations and they are accepted as a basis for fruitful interaction
- the identity of each member of the work community is guaranteed and individual ways of working are accepted
- mutual support to the members of the work community is based on internalized values and norms
- taking risks is considered positive and occasional mistakes are regarded as a part of development processes

- conflicts are taken not as threats, but natural elements of development processes
- conflicts are dealt with in open interaction, so that they can be turned into a source of energy for further development
- discussion on objectives and goals is found normal and necessary, that is, critics and feedback are expected. (Stegö et al., 1987).

By adopting these values and principles in his/her role, a leader sets an example and creates a positive development culture regardless of other aspects of his/her leading style. These school-culture features support cooperative learning, as well. Because learning always means exploring the unknown, the atmosphere within the work community needs to be fairly secure. Leadership is often defined by using terms that describe skills. The significance of skills cannot be denied. However, if leadership is considered nothing but a skill, it becomes easily an object or a manipulative tool.

In change management, especially, beliefs and attitudes serve as basis for values and norms, which on their part direct general policy. According to Dalin (1993) those responsible for change management should understand that

- viable and successful changes depend on actual needs
- the results of changes depend partly on the initial stage, i.e. how successfully the actual needs are met in the beginning
- the work community itself has essential resources for reaching the goals of change
- diversified co-operation is crucial for success
- quality control is important in change
- openness and confidence are central issues in every phase of change
- everyone in the work community is dependent on collegial support and feedback
- the management and each member of work community are responsible for constant evaluation of changes
- the management is responsible for structuring the processes of change and also for clarification of necessary conditions, expectations and phases during changes
- the management has a central role in the development of working atmosphere within groups and in the entire organization
- the management has special responsibility for arbitrating in conflicts
- changing the work culture takes time
- the management is ultimately accountable for the availability of sufficient resources and also for external contacts and "protecting" the process of change from inappropriate interventions.

Because educational institutes as learning organizations are aiming at innovative solutions, in particular, their atmosphere should be open for changes. It is of primary importance with respect to learning. As Dalin points out, as presented above, the leader is responsible for the development of atmosphere, although each member of learning organization should also contribute to it.

Ruohotie (1993) has studied innovation-oriented organizations and he suggests that in order to promote energy and activation for innovations at least two things are required: First, human resources have to be utilized in more efficient and versatile ways. Second, the organization must be more broad-minded and imaginative when testing and exploiting developmental ideas.

Ruohotie (ibid.) has summarized the management culture of innovation-oriented organizations in terms of the following five aspects:

> First, innovation-oriented organizations aim at creating a motivating atmosphere among the personnel. It is natural to be innovative in a supportive climate. Task specification is holistic and consciously ambivalent, encouraging to changes and emphasizing individuals' responsibility for the choices. The objective is collaboration: interaction broadens tasks and makes them more many-sided and it also brings along new, unexpected situations, uncertainty and complexity. Hierarchical structures have to be replaced with networks, which emphasize equality and democracy. Seeking permission from the management often hinders and even obstructs the exploitation of opportunities available.
>
> Second, it is common in innovation-oriented organizations to reward learning, achievement and experimentation in advance. A new task, a new challenge or a new opportunity is already a notable reward as such.
>
> Third, the important objective of management in an innovation-oriented organization is to create an innovative, positive atmosphere and offer opportunities for development. Activation of potentials, inspiration of a shared vision, support for various activities, modelling and appealing to inner feelings are examples of novel management practices. Instead of giving orders, making decisions and controlling, a leader could learn to be a trainer, a pedagogue, an activator, and a facilitator. The task of management is to provide a work community in which everyone has a chance to reach his/her limits.
>
> Fourth, continuous innovation is facilitated by intensive communication. The more intensive communication is, the more openly it is possible to process ideas and related aspects. Mechanisms for spreading ideas and giving prompt feedback are essential for intensive communication.
>
> Fifth, in heavy competition, those organizations succeed better where the personnel is working in a stable and confidential atmosphere. Fear of failure, accusations or condemnation prevent innovations effectively. If an organization is not capable of releasing creative capacity from fixed practices, it supports symbolic innovations only, thus offering a powerful, but groundless image of willingness to renew itself.

An organization that sticks to established practices blocks ideas that would either change or destroy the old and familiar patterns.

Heikkilä (1994a,b) suggested that a learning organization should not be administered too much through *management-orientation* where the leader interprets the one single truth and accordingly maintains order and consistency. According to Heikkilä, a modern leader has to seek for the unknown so to find out new opportunities. Moreover, in a learning organization, the leader's key to success is *leadership-orientation* where the leader has a personal approach on issues he/she encounters. Risk-taking is also typical. Heikkilä stresses that in learning organizations both the managers and the employees should replace their narrow-minded, rigid and reproductive behavior with sensitive reading of weak contextual signals. In this way their reactions would become more sensitive, spontaneous and empathetic, whereas behavior that is relying on less subtle contextual clues makes the atmosphere rigid and feeds stereotypes.

CHANGE RESISTANCE AND MANAGEMENT

In transformation processes counterforces and development potentials are interacting. Change management is a question of influencing both these forces, although the resisting forces may be of primary concern at first when the attempt is made to get the process started. Dealing with resistance must also be based on rational solutions. This is often where the learning begins.

Resistance is a natural and often highly emotional reaction to changes. It may be due to incapability to learn or receive something new. Above all, however, the resistance derives from the idea of abandoning the old and familiar patterns. In changes we do lose something but, on the other hand, we may also gain something. Both gaining and losing are always emotional experiences. Emotional energy deriving from losing, especially, easily breaks out resistance to change. Loss of respect or status, in particular, is bound to stir up emotions.

Resistance to change may get diverse forms, which often clearly tell about longing for the old and safe. It is usual to plead earlier practices and lack of resources. Neither is it unusual to blame restrictive regulations and to "scapegoat" authorities in order to maintain the old practices. Watering down the developmental objectives may be an expression of resistance. Here, people typically postpone the realization of ideas, and propose a comprehensive feasibility study on the subject.

Modification of change is also a common strategy. There, change appears to take place but it is actually restricted to introduction of new terms and concepts while old practices remain untouched. Sometimes initiatives are made in the name of the new system, to get resources but avoiding real changes in working or thinking patterns. Developmental projects can also be considered as "mock training", like swimming without water. Further options are, of course, to begin an open and aggressive resistance or resort to some kind of delay tactics.

We cannot eliminate all resistance to change but it can always be affected. Communication and education are in order when lacking or inaccurate information becomes a problem. Here the results can be fairly long-lasting. It does take some time, though. Anyway, getting the members of the work community to participate in the change is a good solution. This requires, however, that the group involved is functioning well. Encouragement and support are successful solutions when resistance draws from insecurity and difficulties in adapting to new situations.

Sometimes negotiation and an agreement may prove successful in dealing with resistance. If you have the authority and some particular change is necessary regarding the functions as a whole, direct or indirect pressure may be justified, as well. There is always a risk of failure, though. What is gained here and now may lead into a new crisis later.

If attitudes towards change are negative, mere factual information is seldom enough to change them. In any case it takes time. The addressee always filters and selects the messages. Such information that corresponds to his/her experiences and attitudes makes its way more easily through this protective shield. To generalize: attitudes are easy to reinforce and hard to create but even harder to change.

How to go about with change and development, then, to have reasonable chances to succeed? In the first place, one should be aware that resistance to change does exist, and try to be cautious when making proposals. It is important to prepare the ground for change carefully and heed the saying "haste makes waste".

Probable objections should be anticipated. Sometimes it is appropriate to lean on authorities, and sometimes one can openly tell about the negative aspects of the change to disarm the opposition. One can also refer to the respect that pioneers enjoy.

It is advisable to promise some concrete results fairly soon and also express sufficient appreciation for earlier actions. It is also justified to tell what has to be done with respect to the old system and previous practices.

Smaller portions of change may be easier to sell. Accordingly, it is reasonable to divide an extensive development project into smaller parts and start with small steps, promising to go on if need be. At the launching stage critical problem areas should be avoided.

The proposals for change should preferably be unfinished to some extent so that minor revisions are possible. Furthermore, it would be appropriate to provide several alternatives for discussion. New proposals should be well grounded and the disadvantages of the former system brought up.

There should be a margin for compromises in your own initiatives, but on the other hand you should decide which terms are not negotiable. You should also verify that your own proposals are understood and accepted in the correct form.

CONCLUSION

Although above I have regarded management essentially as a matter of co-operation, it does not mean that the leader's work in the reality would diminish. It is the character of this work that is going through fundamental changes. The leader is no longer alone showing the way, making decisions or moving the "troops". Rather, one should understand the significance of collective force in management.

According to Senge (1990) the traditional views on leadership have been founded, on presumptions that people are powerless, lack personal visions, being incapable to control the powers of change. According to this view people suffer from deficiencies that only a great leader can amend.

From the modern viewpoint the leader is seen more as in charge of organizational learning. As mentioned above, it is the leader's duty to build up such an organization where people have a chance for continuous personal development so that they would be able to understand diversity, clarify and elaborate their views and to construct shared models of thinking. It is thus the leader's task to design learning processes where the whole staff can deal with problematic issues and grow to master their learning.

The leader ought to create a span to the future through constructing shared visions within the work community. On the other hand, such visions may prove blinding as well as illuminating (Fullan et al., 1992).

The leader should foster the building of networks with specific interest groups to benefit from the synergy and creation of learning teams. This means transition from hierarchical decision-making into immediate integration of actions. It is a question of thinking and learning together as well as sustaining systemic thinking. At its best it can be leadership based on critical inquiry, or questioning the routines that impede development.

Individuals' needs are important also in organizational learning. What is felt necessary will be learnt. Thus, we must have situations where we can assess the needs for learning together. This enhances awareness of learning. For instance, we can find out together what kinds of new competencies are expected in our environment. Here, the leader has to be a persistent spokesman of organizational and collaborative learning, where people are interdependent and responsible for each other's learning.

Dealing discreetly with the resistance to change is an essential part of the leader's role. If the leader proceeds skillfully enough he/she can lend support to organizational learning, but at worst he/she can become a hindrance to it, as well. Provocative reactions to resistance will only strengthen the fortifications of opposition, which leads to regression rather than progression.

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PROFESSIONAL UPDATING

Pekka Ruohotie

ABSTRACT

Career renewal and continuous professional growth are the subject of current research because they have become essential to organizational health for many reasons: rapid societal changes such as globalization, changing economic structures, changes in work-related values, the requirement for more flexibility at the workplace and the shortening of career spans. Renewed interest in adult education has led to the goal of enhancing both professional competence and personal satisfaction. The present article discusses the personal, organizational and social factors of professional growth in organizations and the role of managers and supervisors in supporting growth at both the individual and collective level.

Descriptors: *professional updating, work environment, professional competence.*

PROFESSIONAL GROWTH IN AN ORGANIZATION

Basic Model of Updating

Professional updating deals with all developmental functions which aim at the maintaining and increasing one's professional competency. Updating should be seen as a continual, lifelong process that addresses such goals as the acquisition of new and up-to-date information, the development of skills and techniques and raising of one's personal esteem in the eyes of others.

The maintenance and increase of competency is subject to the combined effect of personal traits and salient features of the work environment. In Dubin's (1977, 1990) model of technical updating, the most important single variable is personal motivation. As far as the work environment is concerned, the most important stimulating and limiting factors are the nature of work, work assignments, supervisor-subordinate relationships, the organizational climate, peer-colleague interactions as well as management policies and practices. The way in which people perceive and experience these aspects of the work environment is more important than the objective reality.

According to Dubin's model, participation motivation for a certain development activity is high if the person believes that:

a) participation will truly increase his/her ability to cope better in present and future tasks than in previous ones

b) professional competency level affects the amount of rewards and products attainable

c) behavioural change leads to the desired results; for example, raise in pay, promotion, approval, increase in prestige, recognition by employer, decrease in routine tasks, increase in free-time

Farr and Middlebrooks (1990) have likewise described professional updating using the concepts of expectancy theory. Expectancy beliefs, instrumentality beliefs and outcome valences combine in a multiplicative fashion to influence a professional's motivation regarding updating activities. Expectancy relates to the belief that participation will result in becoming or remaining professionally up-to-date. Instrumentality refers to the belief that remaining up-to-date influences professional status and rewards. Outcome valences are connected with to the strength of the professional's attachment to, or aversion to, the consequences of participation in updating activities.

Expectancy beliefs, instrumentality beliefs and outcome valences are dependent upon, among other things, personalities, motive structures, present circumstances and previous experience. That is why people working in the same job and in the same circumstances can have different opinions of the utility, necessity, meaning, etc. of updating.

Professional Growth in the Work Environment

Argyris (1972) sees responsibility and challenges as prerequisites to personal growth, self-realization and the development of one's self-esteem. Unfortunately, Argyris also believes that, in general, organizations do not offer enough challenges and opportunities so that those working in the organization can increase their self-esteem and, in this way, grow.

Kaufman (1990) has presented a developmental model (Figure 1) which describes the factors that determine professional competency and their reciprocal connections in the work environment. Four broad professional competency factors are included in the model.

① Environmental Change; for example rapidly developing technology, organizational restructuring, and demographic flux in the work force.

② The Organizational Climate; which is strongly influenced by the management structure.

③ The Nature of Work; particularly job assignments and growth possibilities in one's work.

④ Individual Characteristics; for example cognitive, motivational and personality (e.g. flexibility) factors.

The causal relations between the components of the above model have been supported empirically by Kaufman's own research (Kaufman, 1979 and 1989). Corresponding causal conclusions can also be found in other studies (e.g. Fossum et al., 1986; Kozlowski & Farr, 1988).

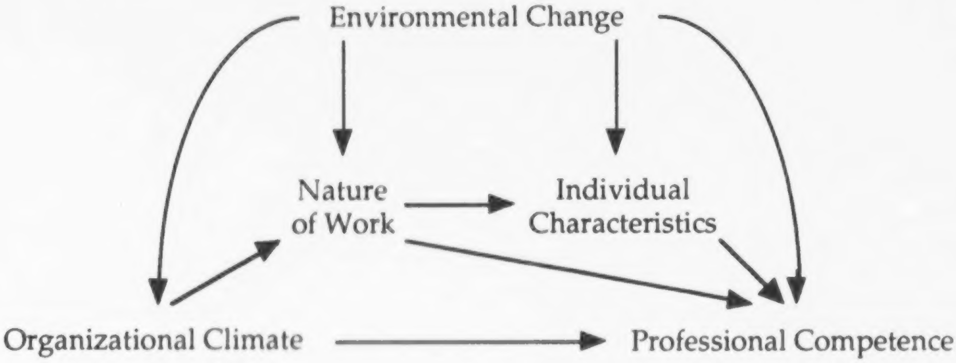

Figure 1. A System Model of Maintaining Professional Competence (Kaufman, 1990)

In ideal cases an individual's development, the growth process, continues throughout his/her entire career. The individual feels that he/she has the opportunity to grow continuously and to develop personally in his/her work. Tasks and positions are, from his/her point of view, seen as a continual course which he/she feels is moving upwards or at least broadening. In practice, however, it has been seen that growth often stops or levels of at some point with the result that work motivation weakens, work loses its meaning and the handling of tasks becomes routine.

When a person is settled in his/her professional role and career routine, one must ask which factors will trigger a change in this routine and create a desire to learn something new. Hall (1986) has formulated a model of mid-career sub-identity development that outlines factors influencing professional development (growth triggering factors) and the process through which the professional exploration cycle progresses. It shows that professional growth is dependent on the social and institutional context as well as personal attributes and circumstances. In Table 1, several factors are presented which can trigger a change in career routine and lead to the acquisition and development of new knowledge and skills.

***Table 1.** Factors Triggering Growth*

In organization/society	**In work role**	**In the individual**
• technological change • external events • growth environment • rewards for change • stress on current performance • internationalization	• experience-enchancing work role • role models • development relationships • new job	• personal life changes • dissatisfaction with the status quo • basic personality • hardiness • flexibility • motivation for advancement • dominance • independence • uncertainty • tolerance for ambiquity and uncertainty

Organizational Triggers

Responding to changes in organizational structure, areas of responsibility and tasks requires the development of new skills. While technological change may require a radical overhaul of basic knowledge and skills, the demands of organizational change are usually restricted to the specific reorganization in question. Even here, however, certain functions may disappear and be replaced by new ones or, as a result of reorganization, people may be placed in a situation where the old routines are no longer usable. Changes in products and production may imply a need for new vocational skills development.

Individuals respond both affectively and behaviourally according to their perception of their circumstances. They interpret environmental events or situational change in ways that are psychologically meaningful to them. Individual perceptions of environmental attributes vary according to the psychological meaningfulness of these events to the individual. Individual perception is also affected by personal values and assessment (cognitive) of environmental events on the basis of work-related schemas such as recognition or challenge (James & James, 1992). In short, people have internal standards or demands in terms to which they determine for themselves whether a given task is challenging or not.

Environmental attributes may be the same for two individuals, and their descriptive perception of them identical, while the valuations associated with them are significantly different. One person may consider a task to be "non-challenging" while the other perceives it as "challenging". Such individual valuations may be assumed to have a determinant effect on affective responses since, together with psychological arousal, they give rise to subjective emotions. Psychological responses are relevant cognitions in emotional terms because they influence the individual's perception of the extent to which the working environment is or is not conducive to personal welfare.

For organizations, just as for individuals, the prevalent psychological conditions are an important determinant of the inclination to growth and research results in my recent research - the Growth Needs Project - show that organizations, or their parts, may differ substantially in this regard. The following factors are among the keys to the creation and maintenance of growth and high innovative capacity.

- *Creating of a supportive culture*: In a supportive environment innovation becomes a natural part of everyday work. Tasks may be intentionally defined in broad terms, encouraging change and emphasizing the possibility of choice. Cooperation is an explicit objective since active interpersonal communication tends to give rise to novel or unanticipated situations, promote elaboration of ideas and support complexity. Because the constant need to seek authorization from others smothers innovation, hierarchical structures are replaced by decentralized networks emphasizing equality and democracy.

- *Reward of development*: In innovative organizations learning, initiative and experiment are prized as inherently valuable. A new task, a new challenge or a new opportunity is seen as desirable in itself, independently of any utilitarian reward which it might offer.

- *Supportive and participative management*: In innovative organizations it is seen as the duty of management to create a workplace in which each individual can reach his/her full potential. Activation of opportunity, inspiration of a collective vision, enabling of activity and the provision of role-models are characteristic of a supportive and participative management style in which orders, decisions and supervision may be replaced by coaching, training, activation and enablement.
- *Intensive communication*: The more intensive the communication, the more effectively new ideas and alternative points of view can be shared and developed. Mechanisms for the rapid dissemination of ideas and for immediate feedback are essential to intensive communication.

- *Security*: In an era of intensifying competition, the organizations which will survive and succeed are those in which there is a secure and confident atmosphere for employees. The fear of failure, of blame or of criticism is an effective damper to creative innovation. Familiar procedures and established standards must be open to question if creative capacity is to be unleashed.

In order to succeed, organizations must be capable of constant innovation. Promoting and inspiring innovation requires at least two things from the organization: (1) it must learn to fully develop and utilize the capacity of its personnel, and (2) it must show imagination and suspend judgement in order to promote the development of new ideas. These requirements have considerable implications for management style, which must create the conditions in which innovative behaviour is possible and then nurture it when it occurs.

Professional development is stifled by excessive pressure to perform and by minimization of risk-taking. Such attitudes encourage people to take refuge in routines that have proven successful in the past - a barrier to innovation.

The organizational climate and the reward system in use influence the direction of people's learning. If the organizational culture emphasizes growth, and personnel development is based on systematic exploitation of people's personal resources, learning is a continuous process. Reward systems can also underpin and direct the growth process; for example, by job rotation, rewarding managers for the development of their subordinates, supporting specified types of personnel switches and so on (see Kochan et al., 1988; Hall, 1986).

Work Role Triggers

According to the findings of the Growth Needs Project, the motivational content of work and the individual's opportunities to influence it correlate positively with personnel motivation. Boring, repetitive and dependent work hampers motivation. Challenging, variable and independent work lays a firm foundation for self-development.

The work itself can provide opportunities for intellectual development and the way in which the work is structured may increase these opportunities. For example, depending upon the individual's personal characteristics and needs, he/she may be given more room for independence through a loosening of restrictions and requirements (a change in the character of the work) or, conversely, the individual's uncertainty regarding his/her task may be reduced by greater precision in job description and responsibility definition.

People respond positively to growth opportunities which correspond to their personal growth needs (Hackman & Oldham, 1980; Loher et al., 1985; Spector, 1985; Graen et al., 1986; Champoux, 1991). If they have strong growth needs they will react positively to growth opportunities, whereas if they have weak needs they will probably react neutrally or even negatively to an open-ended challenge. Thus, growth opportunities must be provided in light of individual characteristics, which may vary over time and according to circumstances. They will not be effective in motivating growth if applied generically.

Growth opportunities for career development can be a natural part of the work environment if accumulation and broadening of experience is attended to on a continuous basis as opportunities arise. For example, project groups may be organized with specific attention to the growth needs of individuals (Hall, 1985). Assigning of intrinsic consultation tasks and rotating of specialists according to the growth needs of employees as well as the needs of the project could create many new opportunities for career development and make possible transfers in different directions, including downwards, within the hierarchy of authority since the purpose of the transfer might be to develop new skills. This practice would require a reward system based on skills and experience rather than solely on position (Hall, 1986).

Personal Triggers

Hall (1986) lists several personal growth "triggers". Events or stages connected to everything from personal factors to life changes - for example, changes in family relationships, health, age, etc. - can make a person ponder/evaluate the expectancies and priorities of his/her career (e.g. Osherson, 1980). In addition, certain personal characteristics predispose an individual to make changes in order to avoid the negative consequences of work pressure or deal with personal frustration concerning the status quo (e.g. basic personality disposition, motivation for advancement, stress on performance, hardiness, flexibility, tolerance of ambiguity, independence) (Kobasa, 1982).

An important prerequisite for development is the ability to cope with challenging goals. According to Hall, success or progress tends to accelerate career development - a psychological success cycle is formed (Hall, 1971). Achieving challenging goals increases an individual's motivation and desire to strive for success in the future. Coping leads to an intrinsic experience of success and progress which in turn enhances a person's self-esteem and competency. Intrinsic rewards strengthen one's commitment and direct later goal choices (see Hall, 1986; Hall & Goodale, 1986, 363; Hall, 1990a).

Researchers in the Growth Needs Project have found that people whose learning skills are most highly developed are best placed to take advantage of development programmes and long-term training. Learning to learn involves the control and application of various learning strategies, skill in practical thought (including creative-critical-analytical thought and logical decision-making), the ability to control resources (such as use of time, learning conditions and one's own strengths), the ability to apply knowledge in new circumstances, and skills in various problem-solving methods. Another important factor is the motivational basis of learning. Self-confidence and personal effectiveness in the learner, as well as expectations of success, have a positive impact on achievement. Growth motivation, the desire on the part of the learner to develop and experience new things, is one of the key factors in vocational development (Ruohotie, 1993). Innovative organizations consciously seek to develop the learning skills of their key personnel and thus to increase their inclination to growth and ability to take advantage of the growth opportunities which exist (Smith et al., 1990).

Professional development also benefits from strong career motivation. London and Mone (1987) have created a versatile and valid illustration of the concept of career motivation. Applying of their analysis in the Growth Needs Project shows that career flexibility, career development and career identity as well as their component factors (such as self-reliance, need to perform, willingness to take risks, setting of career goals and self-awareness concerning weaknesses and strengths) together with commitment to work correlate positively with active participation in development of professional skills, promotion and professional identity (Ruohotie, 1993). There are many reasons to suppose that career motivation and its component factors affect the eagerness of individuals to seek further training, their setting of personal development goals and the importance to them of developmental goal achievement.

The literature contains many references to the effect of the working environment on professional development. On the other hand, there is very little data on factors outside work. In recent years a few studies have been published on child care, child education costs and spouse's work as influences on an individuals' reaction to work and the factors in the conflict between working and domestic roles (Greenhaus & Beutell, 1985; Greenhaus, Bedeian & Mossholder, 1987; Lambert, 1991; Bacharach, Bamberger & Conley, 1991; Higgins, Duxbury & Irving, 1992; Frone, Russell & Cooper, 1992). Research should in the future be directed at the entire environmental context which affects professional development throughout a career.

EXPLORATION LEARNING CYCLE

When career routine is broken, the exploration learning cycle is stimulated and the individual starts to think about his/her career choice and its options (Hall, 1990). External support and feedback can reinforce the awareness of choice. The exploration stage can involve self-evaluation (evaluation of values, needs, free-time activities, skills etc.), the search for new career possibilities and choices or the re-evaluation of one's present work and career. External information, advice or direction is often useful at this stage. As a result of exploration, an individual may try out new activities such as university courses in a new field. New experiences provide feedback for the exploration process and, based on the experience gained, the individual makes a choice; either he/she will stay in the previous role or move onto another one which may be similar or entirely different. A new direction leads to a change in one's sub-identity: giving up the old role as well as learning new skills, knowledge and attitudes.

The process also affects one's self-esteem. Insecurity often results from the relative incompetence which an individual initially experiences in an unfamiliar role. The end result of the successful updating process, however, is establishment in one's new role and the connecting of the sub-identity to one's whole identity. Each successful transition results in an elevated adaptation level marked by a person's increasing confidence in his/her ability to take on new roles. This leads to an accentuated knowledge of self as the agent of one's own career and makes future career learning cycles more likely.

In Figure 2 the exploration learning cycle has been placed into societal and organizational context. It shows that external pressures for change and the three growth triggers - organizational, work role, and individual - influence career routine and can initiate a growth process.

THE DEVELOPMENT OF GROWTH PREREQUISITES

Current leadership theories assume that people will strive to develop themselves if the environment offers opportunity, support and challenge. They will want to develop themselves in a way that uses their abilities. A humanistic concept of mankind suggests that people desire continual growth and that effective leaders awaken this basic desire and then create opportunities for it to be fulfilled.

Farr and Middlebrooks (1990) maintain that an important characteristic of development at activity is that it strengthens a person's intrinsic motivation to maintain and increase professional competency. Many organizations, in their attempts at development, minimize barriers and limitations through external supports but do not increase intrinsic motivation. Recognition and endorsement can be provided for professional development, for example, by reporting on development programmes and those participating in them in a staff newsletter or by creating opportunities for using the newly learned skills in a project group. This is useful but does not address the issue of personal learning motivation.

In addition to performance goals, organizations should also emphasize learning goals. It is not only important how people accomplish their current assignment, but also what they are capable of doing and how otherwise they can use their skills and knowledge. Learning goals direct a person's aspirations to increase his/her competency and acquire new knowledge. Performance goals which emphasize current abilities do not promote intrinsic motivation: for that one needs learning goals aiming at new information. An increase in intrinsic motivation then leads to a more innovative work environment.

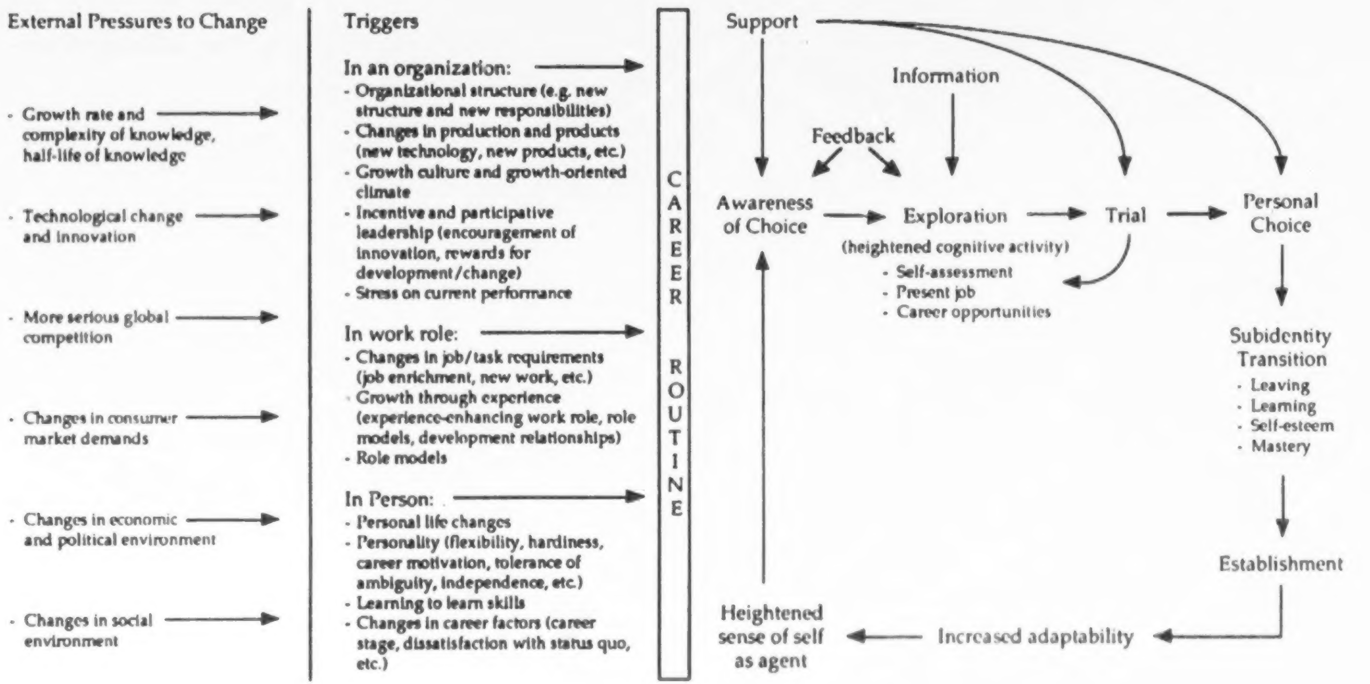
External Pressures to Change
- Growth rate and complexity of knowledge, half-life of knowledge
- Technological change and innovation
- More serious global competition
- Changes in consumer market demands
- Changes in economic and political environment
- Changes in social environment
Triggers
In an organization:
- Organizational structure (e.g. new structure and new responsibilities)
- Changes in production and products (new technology, new products, etc.)
- Growth culture and growth-oriented climate
- Incentive and participative leadership (encouragement of innovation, rewards for development/change)
- Stress on current performance
In work role:
- Changes in job/task requirements (job enrichment, new work, etc.)
- Growth through experience (experience-enhancing work role, role models, development relationships)
- Role models
In Person:
- Personal life changes
- Personality (flexibility, hardiness, career motivation, tolerance of ambiguity, independence, etc.)
- Learning to learn skills
- Changes in career factors (career stage, dissatisfaction with status quo, etc.)
CAREER ROUTINE
Support
Information
Feedback
Awareness of Choice
Exploration
(heightened cognitive activity)
- Self-assessment
- Present job
- Career opportunities
Trial
Personal Choice
Subidentity Transition
- Leaving
- Learning
- Self-esteem
- Mastery
Establishment
Increased adaptability
Heightened sense of self as agent

Figure 2. Factors Relating to the Professional Development Process (Ruohotie, 1993; adapted from Hall, 1986)

An environment which encourages creativity and innovation is characterized by, among other things, freedom, good project leadership, sufficient resources, support and encouragement, a flexible schedule, challenge and a certain healthy amount of pressure as well. The organizational environment can affect growth motivation and professional development by way of perceptions and expectancies (expectancy value, instrumentality value and incentive value) resulting from extrinsic circumstances and limitations. A growth-oriented environment encourages risk-taking and also allows for mistakes. If one is systematically punished for failure and mistakes, the desire to procure and apply new skills and knowledge will be smothered. At its best, the prevailing climate of an organization can encourage professional updating and innovativeness. Supporting growth increases the incentive value of development activity in the staff's eyes.

The nature of the work itself can either discourage or promote the use of growth potential. Monotonous work which has few rewards discourages it. On the other hand, challenging, varying and independent work creates a good base for personal development. The effect of work on individual development can be seen, for example, in the degree to which individuals adapt their growth needs to prevailing growth opportunities. The organization of work creates a framework for the satisfaction of growth needs: the more boring, repetitive and dependent the work is, the more it will frustrate important self-esteem needs (Ruohotie, 1985 and 1990).

Making one's work challenging links intrinsic rewards to work: work itself awakens interest for new learning. The challenge of work is related to matters such as required level of technical skills and knowledge, uncertainty about how to reach goals and the level of self-determination in one's work; for example, the ability to determine one's working methods.

Important influences on growth motivation are the nature of work, work allocation and the evaluation of performance, career development and career plans, use of expertise, responsibility for whole projects, etc. Making work challenging encourages professional learning and creates the possibility for concurrent professional updating and ongoing work performance, which is an economical way to provide for staff development.

Teamwork can be instructive and growth invoking. Hackman and Walton (1986) identify three factors which are characteristic of effective group work.

① A clear goal and clear directions: Group members should be informed of the purpose of a project as well as of its specific goals. Directions should be clear and also encouraging. Goals are most challenging when the directions allow enough room for interpretation and when their accomplishment has a noticeable effect on the group and on other members of the organization.

② Favourable circumstances: The structure of the group should be so determined that it makes effective working possible and the group should have access to the necessary expertise and resources. The organization - particularly, the leadership - should support and reinforce growth through means such as its developmental programmes and reward structures.

③ Sufficient material resources: Modern equipment and adequate supplies promote effective group work.

Individual growth and development can be supported by use of an individual reward system. In order to be effective the system must be flexible and members of the organization must understand performance goals and have realistic expectations for rewards based on the achievement of those goals. Expectations of material reward can be just as motivating as performance feedback and personal recognition.

Kaufman (1990) has suggested many managerial methods to encourage continuous vocational training. His proposals, which are aimed mainly at technically oriented organizations, include the following.

- The vocational skills of professionals should be continuously reviewed. Performance analysis alone is not sufficient since substandard performance is not necessarily proof of professional deficiency. Equally, high performance may result from factors other than up-to-date professional competence.

- An effective system of personnel selection and placement will ensure that the individual's skills and position are in balance. Placement of personnel in positions or functions to which they are unsuited on the grounds of skill or personality or because of low motivation is liable to result in their unwillingness to develop personal vocational skills.

- In addition to the continuous assessment of professional skills the company should carefully monitor the career development of its personnel and the potential required in the future. In some large companies the assessment of potential and of professional development has been assigned to an assessment centre. Performance discussions initiated by a supervisor should include future requirements and related developmental challenges.

- Proper utilization of skills is among the most effective methods of maintaining motivation and competence. Tasks set should encourage the individual to acquire new knowledge and skills. Low motivation and outdated competence decrease the individual's ability and inclination to be productive and innovative.

- In the selection of supervisors the organization must ensure that they have the skills and knowledge required by their subordinates in the performance of their duties since it is the supervisor who assigns those duties.

- Experts should be given adequate resources and opportunities to develop skills and solve problems. Technical and secretarial assistance as well as modern computer and other equipment are among the indispensable tools for development and maintenance of high professional ability. Work should be organized in such a way that secretarial and technical tasks are delegated, leaving the experts to concentrate on the real challenges.

- Members of the working team must have the opportunity to acquire new knowledge through dialogue with their colleagues about challenges they are facing and progress they are making. Most expert knowledge is developed precisely through such interaction with colleagues.

- Supervisors must provide both opportunity and encouragement for subordinates to continue their professional education and development since technical knowledge and skills are developing continuously and are affected by each new discovery or application.

- The responsibility and autonomy of experts should be increased by providing them with the opportunity to influence decision-making. Increased responsibility and autonomy promote innovation and an atmosphere of growth. Growth can be encouraged by the organization of expert groups and individual roles which emphasize autonomy (or autonomous groups) and entrepreneurial thinking.

- The organization should develop motivational support systems which encourage personnel to keep up their professional skills. This appears to be one of management's more difficult problems, whose solution requires the involvement and endorsement of senior management. Among the most important challenges are the development of an effective performance assessment system, support for career development, and the use of individualized rewards that reinforce activities to develop competence.

Table 2 outlines the characteristics of a work community which supports growth. Factors that promote professional growth have been categorized according to which of the following groups they belong: work or work organization, supervisor/worker relations, organizational climate, at workplace peer-colleague relationships and management policies and practices. The table is based on Dubin's (1990) article in which he analyses technical experts' views on factors that influence professional development. At the same time the table indicates the possibilities that supervisors could utilize in their leadership positions.

One central purpose of the Growth Needs Project was to determine what managerial skills are required by supervisors to encourage development of professional qualifications amongst their staff and what is the link between these managerial skills and the prevailing growth opportunities in the work-

Table 2. The Characteristics that Support Growth

Job Challenge and Work Assignments	Supervisory Behaviours	Organizational Climate	Peer Interactions	Management Policy and Practices
• Job assignments are challenging	• Supervisor recognizes good work	• Organization fosters use of cutting edge knowledge	• Peers are up to date in their knowledge	• Financial gain is tied to personal competence
• Work assignments include the latest knowledge in the field	• Supervisor recommends promotions based on competence	• Innovations are encouraged	• Peers often share new useful articles from professional journals	• Management supports in-house staff development
• Job rotation encouraged	• Individual professional development needs are recognized	• Organization rewards professionals for their competence	• Peers are willing and able to suggest new ideas to each other	• Management provides professionals with up-to-date equipment
• The professional participates in relevant discussions	• Independent thinking is encouraged	• Organization holds high professional expectations	• Peers are willing to act as a sounding board for others	• Management has a systematic job rotation strategy
• The professional is allowed to see a project through	• Supervisor seeks solutions from staff	• Organization is a leader in professional development		• Management maintains a current professional library
• The professional's personal interest is considered when assignments are made	• Supervisor provides opportunities for continuing education	• Organization has a progressive atmosphere		
• Job allows free time to explore advanced ideas	• Performance reviews point out strengths and weaknesses and offer suggestions for improvement	• Organization strives to surpass its competition		
• Job assignments allow testing of alternate sol'ns				

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ing environment. On the basis of research results so far the following generalizations can be made:

- A supervisor's view of people affects his/her management style. This view might be called the managerial image of people. According to research results the managerial image of people among development-minded and supportive superiors may be described as emphasizing growth; that is, emphasizing people's responsibility and their innate desire and ability to develop (Ruohotie, 1993).

- A supervisor's view of him/herself and his/her career motivation affects his/her personal achievements and ability to create conditions for personal growth and development in the working group. For example, a supervisor's assessment of his/her ability to achieve determines the setting of personal goals, how energetically he/she works to attain them and how persistent he/she will be in the face of failure or unpleasant experiences (see Bandura, 1986). In addition to interpersonal skills, it is the supervisor's own motivation, innovativeness and vision that determine his/her success. Research shows that organizations favourable to development, that is, those that have a growth-oriented mentality, generally have supervisors with solid managerial skills, high growth and managerial motivation, innovativeness and an interest in problem-solving (Ruohotie, 1993). Creation of a growth-oriented climate requires of the management encouragement and involvement in the development of the workforce, a wish to experiment and skills in rewards and development systems.

Many different kinds of learning are involved in career development. Hall (1986, 1990a) classifies these different types (see Table 3) according to whether task learning or personal learning is in question and what is the temporal extent of the goals.

Based on Hall's (1986, 1990a) articles, one can draw at least the following conclusions:

- Most developmental activities are directed towards short-term rather than long-term learning goals, with the intent of utilizing learning outcomes immediately or in the near future.

- Most developmental activities are aimed at professional rather than personal dimensions of development. The emphasis is clearly on those skills, knowledge and abilities which those participating in developmental programmes can utilize in their current or future work.

Table 3. Task and Personal Learning Dimensions (Hall, 1986)

	Task learning	**Personal learning**
Short term	Improving *performance*-related knowledge, skills and abilities	Resolving issues regarding *attitudes* toward career and personal life
Long term	Improving *adaptability*	Developing and extending *identity*

Developmental activities are, then, often narrowly focused on current professional needs. Neither future requirements nor personal attributes, for example attitudes and self-reflective ability, are considered. Perhaps the least encouraged has been the development of one's professional identity. However, personal development programmes would also be effective when attempting to reach learning goals in one's work. There are at least two reasons for this.

- First, people who are well-established in their careers and have experienced success are highly involved in their current tasks. Their identity is rooted in their current work and a threat or a limiting factor arises when moving to new, untried areas. They would often prefer to continue to use their current strengths rather than start developing new abilities for the future.

- Second, developmental programmes are unlikely to succeed if the participants have negative attitudes towards learning or if they do not personally feel any need for development. These attitudinal and identity barriers should be addressed in order to enhance learning and personal growth.

MANAGEMENT LEARNING

Hall and Seibert (1992) have created a learning and development model which illustrates the management learning curve. Its components are learning inputs, learning content and learning outcomes.

Learning inputs related to the learning and development process are:
- *Life Stage*: People's needs differ across the various stages of life and affect the learning an individual is able to experience.

- *Career Stage*: Developmental tasks and socioemotional needs vary from early through middle to late career. Learning is contextualized to the overall career stage of the individual.

- *Career Anchor*: The anchor shows how the individual perceives him/herself in relation to work; in other words, it is a combination of abilities, motives and values based on self-perception (what is good, what needs and motives do I have, what values determine decisions related to work). Anchors form only after several years of work experience when the individual has experience and also feedback from experience in work. When the anchor is established it serves to guide and constrain future career decisions. The most important career anchors may be security, autonomy, professional competence, entrepreneurial creativity, dedication to serving others, meeting challenges, and a life-style that appropriately balances work with other dimensions of one's life (Schein, 1992).

- *Learning Style*: Not everyone learns in the same way. For example, Kolb (1984) identifies four learning styles: concrete experience, reflective observation, conceptualization and active experimentation.

- *Personality Traits*: Traits which have a direct effect on the learning process include locus of control, self-efficacy and perception of it, persistence, flexibility, tolerance of ambiguity, independence, motivation for advancement and various predispositions.

Sources of learning or learning content may be various training activities and programmes, other people (including supervisors, trainers, colleagues, subordinates, friends and family, customers), hardships (change in duties, demotion in hierarchy, mistakes, problems with subordinates' performance, etc.) as well as the job assignments themselves (such as projects, investment start-ups, personnel changes, responsibility and autonomy). McCall and his research team found that job assignments were the primary source of learning for managers. Challenge, diversity and adversity are perceived by managers as the most important source of learning. The next most important is co-workers (such as senior managers acting as role-models). Hardships, most of which are the experience of failure, result in considerable self-analysis (McCall et al., 1988).

Learning outcomes are skills which may be acquired or refined through managerial learning. Hall and Seibert (1992) distinguish four areas of management skill

- *technical skills:* specialized knowledge, analytical ability within one's special area, and facility with the tools and techniques of that specialty

- *human skills*: working as a group member and building cooperative effort within that team as its leader

- *conceptual skills*: seeing the enterprise as a whole and making decisions in ways that promote the organization's success and welfare

- *intrapersonal skills*: awareness of one's own identity, strengths, weaknesses and one's ability to change these aspects of self.

According to Hall and Seibert (1992), technical, interpersonal and conceptual skills are promoted by work-related learning. The result, in the short term, is improved performance and, in the long term, adaptability to changing circumstances. Intrapersonal learning, for its part, leads to development of the personality: in the short term to changes of attitudes and in the long term to the development of one's own identity.

Hall and Seibert (1992) point out that in strategic management learning the focus is far wider than in the above analysis. This is a matter of understanding and controlling the organization. It requires consideration at three levels, the strategic, the managerial and the operational.

The Strategic Level

Learning is an important factor in the world of business. We should be asking how learning can take place more quickly and responsively. Future learning needs cannot be fully anticipated, nor can one realize developmental programmes sufficiently quickly. We should be asking how we can make learning a part of the basic fabric of the organization. How can the organization respond with speed and flexibility in its day-to-day operations to the needs of the environment - particularly customers - and develop internal resources for change; that is, always be learning and adapting? Task-related learning, the development of competence in specialized areas, is part of learning within the organization. At least as important is the development of identity and adaptability, or learning to learn. This results in self-directed learners who are able to exploit the uncertainty inherent in the organization. Argyris' theory throws light on one possibility, tested in practice, to create a culture of learning within the organization (see Argyris, 1992). This culture values unconventional ideas and behaviour and regards them as stimulating and constructive rather than as threatening. Managers actively seek out and learn from feedback not only on the organization's output but also on the internal processes responsible for it. Learning organizations are self-designing systems (Weick and Berlinger, 1989).

The Managerial Level

A learning organization requires concrete action from the management. The senior management should make training and development a priority, and the head of the human resources training department should be a member of the top management team. Line managers should be made responsible for the development of their staff. The training budget should be approximately four per cent of total payroll expenses. (These recommendations were made by the American Society for Training and Development and the U. S. Department of Labor). Corporate communications departments should also provide information more efficiently than hitherto, so as to stimulate people's thinking. They can create contact with new people and acquire new ideas. Electronic mail provides input from a wide range of experts, knowledge which can be recorded and thus made available to future learners.

The Operational Level

Organizations need managers and supervisors who possess "metaskills" in learning, who can develop their personal identities and adapt to change. Supervisors should harness their work experience more effectively and give more recognition and value to personal learning. The balance between work and family is also better recognized today as a promoter of learning both within the organization and within the person. Balance in this case does not mean merely the balance between the time devoted to two roles but also the balance in psychological involvement in two roles. This internal balance is related to personal values and identity. Consequently, improving it requires examining these values and this identity (see Hall, 1990b).

The development role of management can be promoted and supported by an integrated management system that includes goal-setting, management development, management of performance, performance appraisal and reward (see Mone, 1988). Clear, interesting and challenging development goals for subordinates increase motivation and improve performance. They also make the supervisor's responsibility more visible and thus increase accountability. The supervisor's task is to ensure that the developmental goals concern specific areas of knowledge or skill, are linked to the performance required of subordinates, demonstrate the criteria by which this performance is measured and are both challenging and attainable. The manager must both monitor his/her staff's development and reward the attainment of goals. He/she should also be assessed on the basis of how well he/she has helped his/her subordinates to attain goals and meet the future requirements of business. The manager should also be paid by results. Development of human resources requires a wide range of managerial skills which should be consciously developed by the individual manager.

CONCLUSION

Career renewal and continuous professional growth are the subject of current research because they have become essential to organizational health for many reasons: rapid societal changes such as globalization, changing economic structures, changes in work related values, the requirement for more flexibility at the work place, and the shortening of career spans. Renewed interest in adult education has led to the goal of enhancing professional competence and personal satisfaction. These developments have led to a rethinking of the importance of and the conditions for lifelong learning and continuous growth.

Personal and organizational factors, which are both important in motivating and sustaining growth, interact in complex ways which must be appreciated in order to understand the dynamics of personal development and professional updating.

Supervisors are in a key position to support growth at both the individual and collective level because it is they who set the general conditions for and arrange specific opportunities for learning at work. Therefore, in-service training must be seen as an active responsibility and central function of management in the modern world. It is essential to organizational effectiveness and provides the foundation for the scientific and technical innovation which is required in order to thrive in a rapidly changing environment.

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POTENTIAL AND LIMITS OF EDUCATIONAL REFORM

Johanna Lasonen - Marja-Leena Stenström

Societal changes are reflected in educational policies and particularly in the organization of occupational education. The Finnish reform of upper secondary education carried out in the 1970s and 1990s was intended to provide all young people with a high-quality general education and a broad-based occupational education. The range of options was designed on the basis of uniform objectives, one of which was educational.

Cuban (1990) argued that educational reforms have mostly failed to remove the problems they were intended to solve. He asked the three fundamental questions concerning the recurring reforms of education: Are we attacking the right problem? Have the policies we adopted fitted the problem? Have practitioners implemented the policies as intended? Ameliorative and radical reforms are designed in different ways, the former to make ongoing practices more efficient and effective, the latter to confront the cultural and pedagogical traditions, values and beliefs that underlie everyday practices and organizational arrangements. Occupational educational policies concerned with more flexible systems tend to assume that certain organizational changes, such as efficiency and productivity, decentralization and management with objectives, are essential preconditions for reforms (Goodman, 1995). However, many popular slogans in educational policy and policy goals have no empirical or theoretical bases. Figure 1 shows some of these fresh fashions, called critical principles, of educational restructuring. Measures such as the decentralization of decision-making might be expected to promote flexibility. However, devolving authority from a central government to the local level may not actually result in improved institutional dynamism and shared decision-making powers among stakeholders.

The current trend in Finnish education is decentralisation. The aim is to reduce educational administration. As a result, educational institutions and their owners are being made responsible for the quality of education. The focus of education policy has shifted from the infrastructure to quality assurance. A reform of vocational education will seek to simplify the educational system and eliminate multiple education. The new curricula will reduce the demarcation between specialized educational institutions. The institutions will be developed into learning centres that offer flexible programmes for all ages according to individual and local needs.

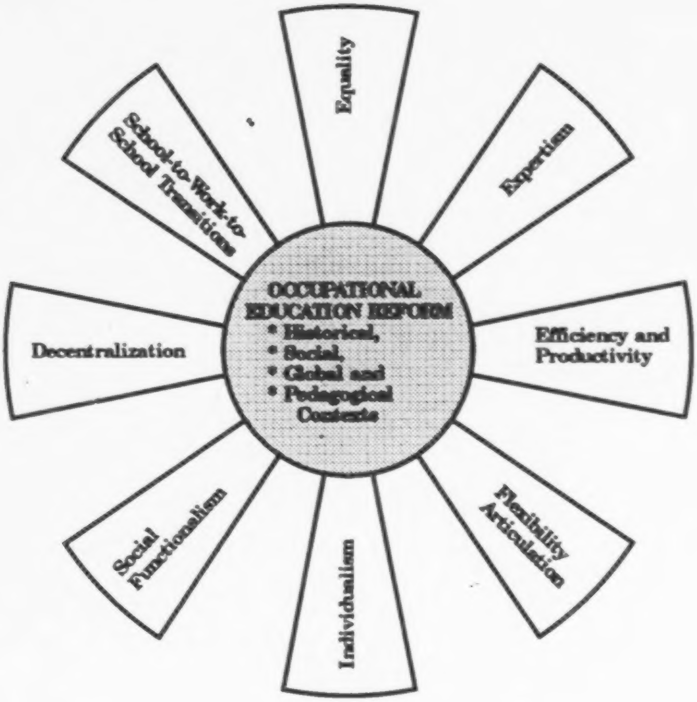
Equality
Expertism
Efficiency and Productivity
Flexibility Articulation
Individualism
Social Functionalism
Decentralization
School-to-Work-to-School Transitions
OCCUPATIONAL EDUCATION REFORM
* Historical,
* Social,
* Global and
* Pedagogical Contexts

Figure 1. *Critical Principles of Educational Restructuring*

Equality policy in education has emphasized gender equity in the 1990s. Gender inequality among students in education is reflected in and reinforced by gender inequality in the profession of education. Experts in a particular field of specialization have an authority stemming from their knowledge. The division of labour in education favours men as experts. In education, too, the experts - professionals with the highest status and with the highest-paying positions as administrators and professors - are more often men than women.

In the early 1990s the debate on individualization began to influence the goals of educational policy, too, where the emphasis now lies on choice, flexibility and self-regulation. The current reforms of occupational education aim at individualized and flexible studies and degrees. On the other hand, it is assumed that learning is an individual experience, even if individualized instruction might have little to do with developing a unique learning style, thoughtfulness, creativity and efficacy. Individualized education is an organizational and instructional design that separates a student's learning from that of their peers and assesses them individually according to their mastery of a standardized curriculum.

However, school restructuring movements may be designed to meet functional needs of the society's emerging commercial interests without debating about the purpose of schooling to educate human beings to their full potential. The basic concern here is how educational purposes can be broadened beyond a social functionalism and the rationale of the marketplace. Efficiency and productivity reflect the desire to increase the productive capacity of schools in industrial terms rather than in terms of educative experiences. The ideas of efficiency and productivity have an effect on curriculum and instructional designs, and on staffing patterns.

The relations of education and the labour market are in the process of continuous reorganization. Transitions from education and training to work and back to education and training do not form any definitive career as clearly as they used to do in previous decades. The organization of an individual's life is being transformed at the same time as it is more on his or her own responsibility to give it a shape. In educational policies this is seen in the switch from standardization to differentiation, to individualizing education through an enlarged range of options.

Goodman (1995) questions the five core principles of school restructuring, which are social functionalism, efficiency and productivity, individualism, and expertism. Transformative efforts based on a vision of education for democracy offer one example of how educational purpose can be broadened beyond social functionalism. Schools in many Western societies have been based on a model of the efficient and productive business organisation.

A school reform project may remain at the level of rhetorics by making merely technical changes and reinforcing the underlying values, power relationships, and conventional ways of educating students. Ekola (1991) and Välijärvi (1993) in their evaluation studies of the 1980s Finnish upper secondary education reform examined the core assumptions, predispositions, and values that crystallize the purpose of schools and the roles and responsibilities of teachers and legitimize the manifestations of curriculum content, human actions and organizational structures. An educational reform is carried on at many levels: administration, schools, principals, teachers and students. In Finland the reform of upper secondary-level education and vocational teacher education was put into practice by the National Board of Education and the reform of polytechnic education by the Ministry of Education. Schools plan and implement their curricula at the local level by themselves or in cooperation with other schools. This changes the teachers' role and work, too. Instead of instructing, tutoring and advising students to use self-learning methods are teachers' daily activities. The most interesting educational reform experiments are those set in motion by teachers at the school level. Accordingly, teachers and school principals are key persons in developing and implementing school reform and the work of the schools. However, no reform could possibly succeed without students and their input in creating working environments favourable to learning (Lasonen & Frantz, 1995; Lehtivaara & Volanen, 1993; Nurmi, 1994; Välimaa, 1994). The policy goals of the Finnish occupational education reform have involved the development of a flexible educational structure. Flexibility has meant clustered occupational fields, open options for students, and increased career choices and opportunities to engage in international communication and collaboration. Student-centred study methods have also promoted flexibility (Hull, 1993). The integration between general and vocational education has been implemented through cross-institutional collaboration in secondary-level education. Institutions of learning are striving to move from conventional classroom teaching to distance learning. Information technology is becoming a pervasive influence in education (Linnakylä, Sajavaara & Takala, 1991). A feature of today's vocational teacher education is reflective thinking, promoted in health care and social work teacher education (Nurmi, 1994; Toiskallio, 1991). The role of a teacher has changed, reflected in the more versatile structure of the jobs required to take care of the needs of the students and working life (Väärälä, 1992).

The achievements of the reform of upper secondary education show, firstly, that an enlarged range of options meets many current needs. Secondly, the reform offers and makes use of a broader range of options than is available in other educational sectors. Vocational institutions taking part in the experiment in particular have given their students increased opportunities for choosing across institutional boundaries. Volanen (1995) found that most common are students of general upper secondary school taking courses at vocational institutions, next come students of vocational institutions taking courses at other vocational institutions, then there are students of vocational institutions also studying at general upper secondary school and, least often, general upper secondary school students also studying at other general secondary schools. Thirdly, the experiment has revealed how difficult it is for schools to change their practices and achieve fruitful cooperation, hampered as they are by the divergent cultures of different institutions (Numminen & Lampinen, 1994; Numminen & Virolainen, 1995).

The preliminary achievements of the experimental polytechnics have indicated that planning work and training programmes had improved while teaching methods had been transformed. The results of the polytechnics experiment show that organizing studies on the basis of study programmes is a feasible way of designing polytechnic curricula. The polytechnics have improved their operations by replacing a school-based teaching and studying culture with an academic culture characterized by a more ample range of options. This has made possible more individualized study programmes and project work. Instructional perspectives have broadened and there is greater emphasis on the actualities of working life. Cooperation between different educational institutions is varying (Korhonen & Mäkinen, 1994; Korhonen, Mäkinen & Määttä, 1995).

In the policies and practices of its occupational education reform, Finland is seeking to remove barriers within as well as between upper secondary and tertiary educational institutions and programmes. The strategy is to increase the range of flexible options available to the students through inter-institutional cooperation and administrative consolidation of separate institutions and programmes at both the secondary and post-secondary level.

Traditionally, Finnish education has been under strong central control with prescribed standards for school administration and curriculum. Recent years, however, have witnessed rapid decentralization. The strategies for accomplishing the new goals can be characterized as moving away from state mandates to local control. Rigid curriculum requirements have been relaxed and students have been allowed more opportunities to take courses at both academic and vocational schools. The European tradition of in-depth preparation for work or for entry into higher education facilitated the development of separate systems of institutions of secondary education, devoted to academic and vocational preparation respectively. However, changes in the Finnish economy have led to a severe recession, creating large numbers of unemployed, and underemployed and made it essential to form collaborative economic and political links with other nations, particularly of Western Europe. This in turn necessitated a more flexible way of grounding students for a rapidly changing environment.

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Contemporary Issues of Occupational Education in Finland is a comprehensive publication which explores the restructuring of Finnish vocational and professional education and promotes a broader understanding of how national history and culture influence reforms. In the book, the authors discuss a variety of reform and educational policy strategies based on theoretical and empirical analyses.

Drawing on interdisciplinary and international empirical research and on their own practical experience, the authors present a variety of innovative models of occupational training for all those educational levels where citizens participate during their lifespan.

The authors address craft and prevocational education, reforms of vocational teacher training, as well as secondary, tertiary and adult occupational education. Flexibility and integration of vocational and academic education are considered. As a new member of the European Union, Finland faces the challenges of articulation, integration and providing open educational pathways both nationally and internationally.

Teachers, teacher educators, planners, administrators, researchers and other professionals working in the field of occupational education will find this book a valuable case description of the Finnish experiences in promoting economic development and people´s well-being through vocational education.

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